THE physical therapy REVIEW

Second Congress
World Confederation for Physical Therapy
Hotel Statler, New York City
June 17 - 23, 1956

Disuse Atrophy of Bone with Special Reference to Physical Rehabilitation — BILLENSTIEN

Decubitus Ulcer Care — BURSTON, AUSTIN, and REEDER

Establishing Physical Objectives in the Rehabilitation of Patients with Parkinson's Disease (Gymnasium Activities) — BILOWIT

Use of Volunteer Workers in a Physical Therapy Section — SCRUGGS

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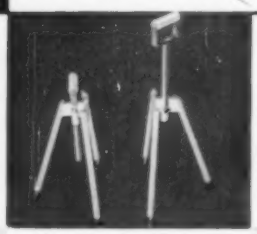

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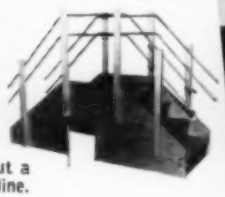

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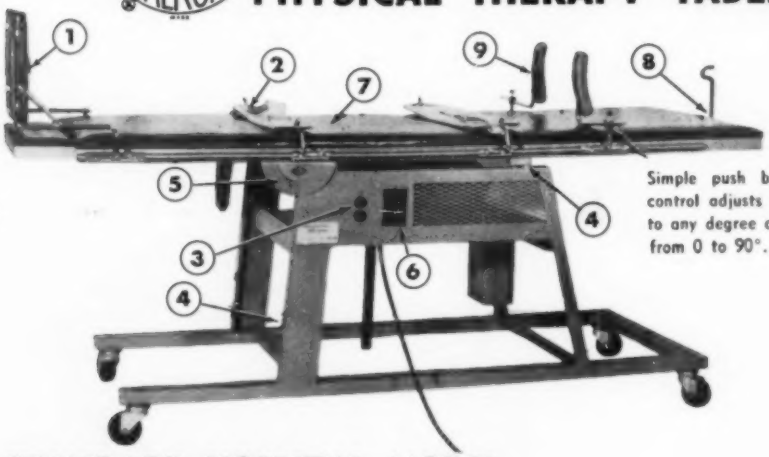

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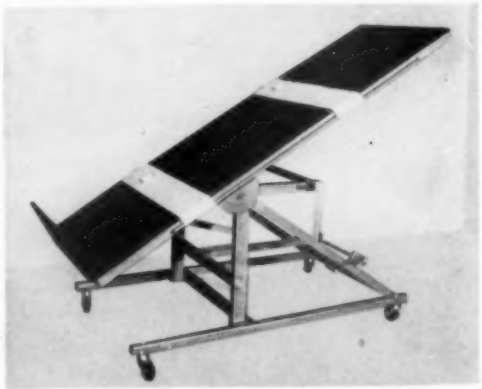

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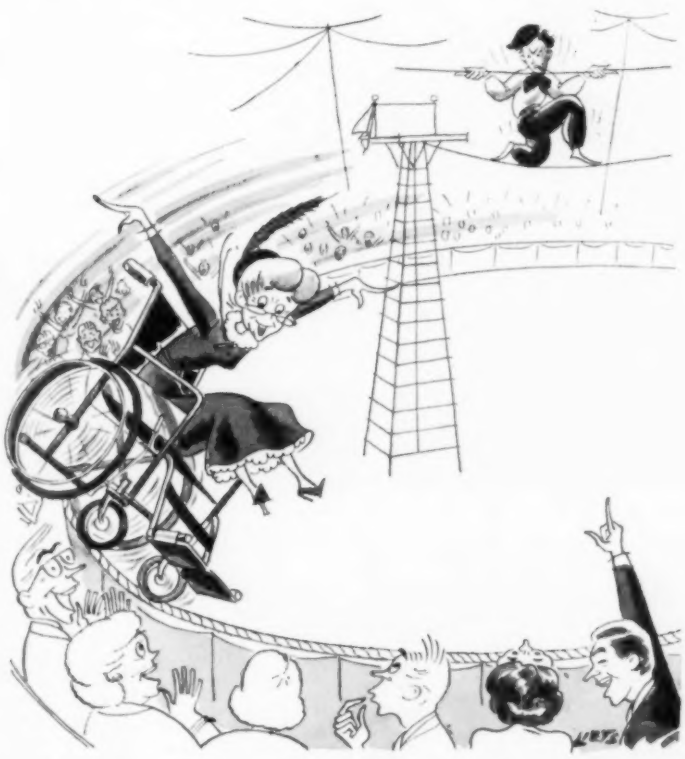

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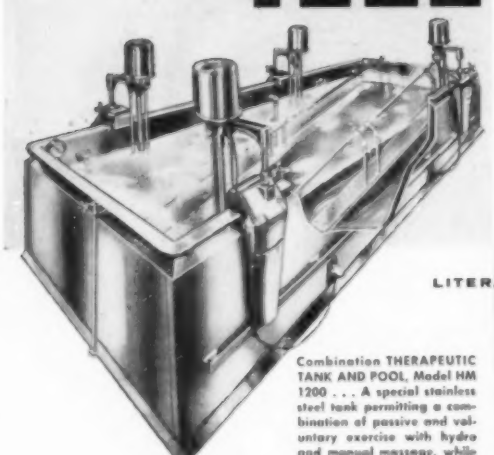

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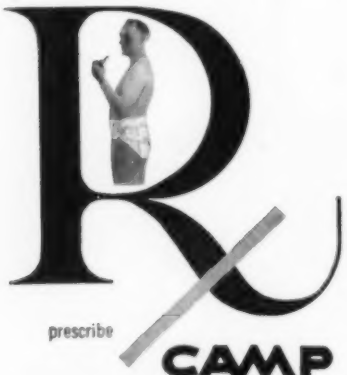

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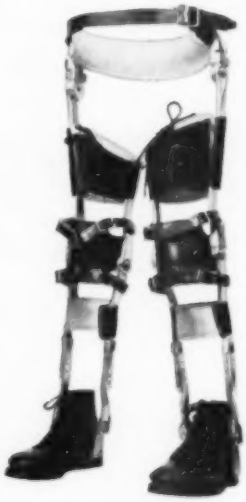

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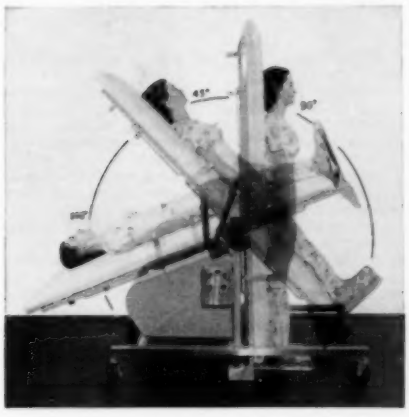

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On January 17, I was invited to attend the first showing of a new motion picture produced at the College of Medical Evangelists by Eric Tarr, one-time professional in the motion picture industry, now a medical student at the College. The creation of this twenty-five minute film was for the purpose of showing high school, college students and nurses there is such a profession as PHYSICAL THERAPY, and acquaint them with something of what a PHYSICAL THERAPIST is and does; then perhaps they will be inspired to enter training in this profession.

I anticipated seeing something of an amateur job—the usual thing done for "educational purposes." I left humbly but spiritually elevated. Here is a film in which not only its participants but all therapists may well be proud. I suspect the TV program "Medic" will grab it. The film is to be widely shown throughout the land to college students and at PT Schools. I hope to procure a few prints to loan to proper groups and schools. Be sure to put this on your "must list":

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———o———

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Disuse Atrophy of Bone with Special Reference to Physical Rehabilitation

Dorothy C. Billenstien, M.S.

Introduction

Disuse atrophy of bone as a consequence of paralysis and immobilization is a well known phenomenon. It is characterized by a loss of bone substance and a decrease in bone strength. In severe cases of bone atrophy it is not uncommon for pathological fractures to occur with little provocation. From this point of view it is surprising that so little attention has been directed towards this aspect of the skeletal system in the evaluation and treatment of the severely physically disabled. Many of the treatment procedures used in physical rehabilitation are of a strenuous nature, and the skeletal system is frequently subjected to considerable strain. Under the circumstances, it would seem advisable that the medical and paramedical personnel concerned with the physical rehabilitation of the severely handicapped not only recognize the existence of bone atrophy, but also have information available as to the degree of disuse atrophy of bone present in the patients under their care.

In this paper various aspects of the problem of bone atrophy are reviewed, the present status of roentgenographic measurement of bone atrophy is discussed, and the feasibility of utilizing roentgenograms routinely in the evaluation of disuse atrophy of bone is considered.

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Pathology of Disuse Atrophy of Bone

Living osseous tissue, an extremely plastic and dynamic substance, once formed, is not static. On the contrary, a remarkable process of destruction and replacement occurs continuously. The replacement rate in the shaft of long bones in two species of animals has been found to be approximately 8 per cent in two months (Hevesy, Levi, and Rebbe, 1940).

Atrophy of bone is defined as a loss of bone substance occurring as a result of disuse. It is to be differentiated from pathological conditions of bone characterized by a decrease in hardness with a corresponding increase in softness. In disuse atrophy the external dimensions remain relatively unchanged, but the mass of bone tissue is reduced. Atrophy of bone may be recognized grossly, microscopically, and roentgenographically. The macroscopic picture is one of bone brittleness, a thin cortex, and slender trabeculae that are widely spaced. Microscopically the trabeculae are smooth surfaced, the bone marrow is fatty, fibrous, and hypoplastic. The roentgenogram is homogeneous and diffuse with the thin, widely spaced trabeculae evident. There may be systemic, regional, or local distribution of atrophy depending upon the causative factors and the extent of the disability. It is generally stated that bone atrophy is the result of deficient formation of osseous tissue in the presence of a normal rate of destruction. However, the rapidity

with which bone becomes atrophic suggests an abnormally increased rate of destruction as well.

In fracture cases on bed rest, calcium excretion increases rapidly for the first month. The urinary level of calcium then reaches a plateau that is maintained until ambulation is resumed. At this time the excretion level gradually returns to normal (Howard, 1945). In normal subjects placed in plaster casts and put on bed rest, calcium loss follows a similar pattern but to a lesser degree (Deitrick, Whedon, and Shorr, 1948). However, serum calcium, phosphorous, and phosphatase levels remain normal in disuse atrophy of bone.

Clinical Cases Demonstrating Bone Atrophy

Lesions of the spinal cord are responsible for disuse atrophy of bone in a large group of patients. In this category are included cord severance, spina bifida and cauda equina lesions, as well as compression tumors and abscesses located within the vertebral canal. A combination of motor and sensory denervation of varying extent is usually observed in this group of persons. The degree of bone atrophy is dependent upon the extent of the disability and the duration of the immobilization.

Pathological fractures do occur in adults with spinal cord injuries (Abramson, 1948), but they are relatively infrequent as compared to the incidence of fracturing in children of this group. Katz (1953) has described two cases, one a spina bifida and the other a child who sustained a cord severance at the age of 3. The number of fractures in these two cases was alarming. It is to be noted that none of the fractures was reported to have occurred while the patients were ambulatory with braces and crutches. The exact time of fracturing, however, could not be accurately determined because of sensory loss in these patients. Symptoms of swelling and distortion of the extremities were first noticed while the children were in bed. Katz concluded that the responsible factors were the unrestrained activity of this age group and the lack of sensory protection. Undoubtedly the extremities were subjected to abnormal positions and trauma. Jeannopoulos (1954) reported essentially the same observations. In this series of cases one child with spina bifida sustained five fractures in one year; a child with an avulsion of the lumbosacral roots experienced ten fractures in three years. It was observed that the tendency for pathological fractures decreased with age, and after the age of 10 a reduction in the frequency of fractures was noted. Both reports stated that healing occurred at a normal rate, but the time lost was detrimental to patient progress in physical rehabilitation.

Peripheral nerve injuries such as avulsion of the brachial plexus or severance of the sciatic nerve should not be disregarded in a consideration of bone atrophy. Under these circumstances extensive paralysis can occur with accompanying disuse atrophy of bone.

Bone atrophy should also be recognized as a sequel of poliomyelitis. Although pathological fractures in poliomyelitis have not been reported in the literature, personal experience has confirmed the possibility. Unlike spinal cord and peripheral nerve injuries the pathology in poliomyelitis is confined essentially to the efferent nerve supply. Consequently, there is sensory protection.

Although the etiology and pathology of postmenopausal and senile osteoporosis differ from that of simple disuse atrophy of bone in a number of respects, the loss of bone strength is a factor in common. Persons of the older age group often require physical rehabilitation for other types of injuries; as, for example, fractures or amputations. In the dissecting room it has been shown by bone weight measurements of the extremities of male subjects that after the age of 60 there is a decrease in bone weight (Ingalls, 1931), and it is to be assumed that a corresponding decrease in bone strength occurs. Postmenopausal osteoporosis, however, usually becomes evident between the ages of 40 and 60 years.

Mechanical Factors Concerned In Apposition and Resorption of Bone

The mechanism by which mechanical stress stimulates the apposition of new bone, or lack of function leads to bone resorption has never been satisfactorily explained. Bone adapts both grossly and microscopically to the functional stresses of pressure and tension. This is well illustrated during the growth period under normal conditions as well as in pathological situations. The increase in the angle of the femoral neck in gluteus medius paralysis in children is a classical example. Experimentally it has been shown that skeletal tissue of the chick embryo, grown in tissue culture and subjected to mild mechanical pressure, will respond directly to the pressure. At the points of compression the cartilage cells undergo reorientation, and osseous tissue forms (Gluckmann, 1942). Apposition of bone apparently results if pressure and tension are applied to bone in a normal manner and

within physiological limits. Conversely, pressure or tension applied to bone in an abnormal fashion and beyond the point of physiological tolerance will lead to bone resorption. The effects of pressure on the vertebral column illustrate this point. After years of compressing one vertebra on another, osseous spurs and lipping may occur along the edges of the vertebral bodies. Pulsation of an aortic aneurysm against the sides of the vertebral bodies, on the other hand, results in bone resorption. In this connection, Abramson (1948) has reported a lesser degree of bone atrophy in ambulatory paraplegics than in patients confined to wheel chairs. This may be considered as an example of pressure applied in a reasonably normal manner and within physiological limits.

Even less is known in regard to bone resorption under conditions of disuse. One may postulate that this is a case of conservation of material and energy by the organism. Tissue not used is not maintained. In amputations of the femur, this effect is most pronounced. In addition to general atrophy of bone, the distal end of the amputated femur occasionally becomes tapered. This may be modified depending upon whether or not a prosthesis is worn and the patient is ambulatory as weight bearing tends to reduce disuse atrophy of bone (Weinmann and Sicher, 1955).

Experimental Data of the Effects of Immobilization and Denervation on Bone

Denervation with resulting paralysis and consequent disuse, or simple disuse without denervation, are clearly recognized as causative factors in the production of bone atrophy. Less clearly defined are the effects of denervation as distinguished from the effects of simple disuse. In an attempt to elucidate this aspect of the problem, a number of experiments have been designed to determine the specific influence of the lack of nerve supply on bone. In general, the procedures have been to produce various combinations of denervation and then to compare the bone changes with those occurring as a result of simple immobilization. A few of the more pertinent studies will be brieflly reviewed.

One of the earlier investigations is that of Grey and Carr (1915). Either the ventral or dorsal roots of the lumbosacral plexus were sectioned in adult rabbits and dogs. The bone changes of the lower extremities were compared with those of nondenervated, immobilized extremities. The animals with posterior root section were not physically incapacitated, and no x-ray changes in bone were observed. The animals with ventral root section did not use the operated extremities and showed evidence of mild bone atrophy. The greatest degree of bone change, however, was observed in the nondenervated, immobilized animals. On the basis of these findings, Grey and Carr concluded that nerves do not exert a direct trophic influence on bone, and disuse was considered to be the primary causative factor in the production of bone atrophy. Allison and Brooks (1921) reported a similar study. In one group of adult dogs the brachial plexuses were sectioned; in another group, the upper extremities were immobilized in plaster. A decrease in the width of the cortex occurred with a corresponding decrease in bone strength. As the effects were the same in both the denervated and the immobilized extremities it was concluded that the length of the disuse period was the important factor rather than the method used to produce disuse atrophy of bone. These investigators were of the opinion, also, that lack of nerve supply has no direct effect in the production of bone atrophy.

It is still not accepted that nerves do not affect bone as shown by the work of Fontaine, Mandel, and Ebel-Gries (1952). These investigators compared the chemical constituents and weight changes in the bones of rats in which either nerve section or plaster immobilization of the extremities had been done. Qualitatively the chemical constituents remained the same, but a greater reduction in bone weight was noted in the animals with nerve section. In the bones of young animals with nerve section a greater percentage of weight reduction was observed than in the bones of adult rats with nerve section. More recently, the problem has again been studied (Gillespie, 1954a). Either ventral or dorsal root section was performed on rats and cats and the bone changes compared. The animals with ventral root section showed a 20 per cent reduction in bone weight, ash weight, bending moment at breaking point and x-ray density. The animals with dorsal root section showed no changes. This is interpreted to indicate that the efferent nerves do exert an indirect influence on bone. Obviously, the effect of nerve supply on bone has not been definitely determined, although the concensus seems to favor simple disuse as the principle factor in atrophy of bone.

Experimental evidence suggests that the type of paralysis in spinal cord lesions may have an influence on the degree of bone atrophy. For example, patients with flaccidity could be ex-

pected to have a greater degree of atrophy than those with spasticity. Abramson (1948), however, states that the existence of spasticity apparently has no effect on the severity of bone atrophy in paraplegics. This point needs elucidation.

The results of a clinical study in which normal human subjects were immbolized in plaster casts and put on bed rest for a period of six to seven weeks are of interest (Deitrick, Whedon, and Shorr, 1948). Roentgenograms taken at three week intervals showed no detectable x-ray changes. This was anticipated because only 1 to 2 per cent of the body calcium was lost. It was estimated that at least 10 per cent of the calcium must be lost for a change in the roentgenogram to appear. In the case of fractures, however, there is a greater degree of calcium depletion than in simple immobilization (Howard, 1945).

Attempts have been made to prevent or reduce the severity of bone atrophy by the administration of substances important in bone formation. Bell, Cuthbertson, and Orr (1941) measured the strength of bone in relation to calcium intake. It was found that at a certain level of calcium consumption, maximum strength was reached. A further increase in calcium intake did not cause a corresponding increase in bone strength. More recently, sex hormones have been administered in an effort to prevent or reduce the degree of bone atrophy. Gillespie (1954b) produced paralysis in rats by avulsion of nerve roots and measured bone changes with and without the administration of oestradiol and testosterone. Both hormones significantly reduced the total weight loss, ash weight loss, and the bending moment at the breaking point. Neither hormone, however, affected the actual breaking point. Of the two substances, oestradiol had the greater beneficial effect in that it also promoted calcium retention. It was suggested that oestradiol may be of benefit in reducing the degree of bone atrophy. There may be undesirable side effects, however. In any case, the attempt to build matrix and to recalcify by the use of large amounts of oestrogen, testosterone, high protein and high calcium-phosphorous intakes with vitamin D, should not be instituted until the patient is ambulatory. In complete bed rest hypercalcemia with accompanying nephrolithiasis and nephrocalcinosis as a result of intensive hormonal and dietary treatment is a definite hazard (Stein, Stein, and Beller, 1955). It should be emphasized that mobilization as soon as possible and to the point of tolerance is apparently the most effective preventive of bone atrophy whether or not other therapy is instituted.

METHODS OF ESTIMATING BONE STRENGTH

For many years the anatomist, anthropologist, and physician have been interested in the effects of trauma on intact bone. However, it is only recently that technics of mechanical engineering have been employed to a rather high degree of efficiency in the experimental study of bone strength. As one would expect, the experimental methods of measuring bone strength are considerably different from those used clinically. For example, in the last few years Evans and his co-workers have refined the "stress-coat" technic developed by Küntscher in the 1930's. Briefly, this requires lacquering of dried bone. A force applied to the bone will produce a pattern of cracks in the lacquer. The pattern is then analyzed, and information as to the effects of the force can be obtained. Also, a technic has been devised to record the stresses and strains occurring in bone in the experimental ambulatory animal. This is done by the insertion of a strain gauge mechanism directly into the shaft of the bone (Evans, 1954). Methods such as these, while capable of yielding valuable information about bone are, at the present time, of little use clinically. From the clinical standpoint the only available method of estimating the degree of bone atrophy is the roentgenogram. Therefore, it seems pertinent to gain some insight into the accuracy and reliability of x-ray as a method of measuring bone atrophy.

A number of studies have been undertaken for the purpose of finding a reliable and convenient roentgenographic method of estimating bone density on a clinical basis. Most investigators employed a phantom that was x-rayed along with the part under consideration. The phantoms were of graded thickness and calibrated to give an index of density. The materials used were ivory cylinders (Stein, 1937; Bywater, 1948), bone (Henny, 1950), and aluminum strips (Gardner, 1942; McFarland, 1955). Stein (1937) also developed a water phantom designed to eliminate the soft tissue variable. In addition, a densiometer was occasionally used to measure the opacity of the films (Brown and Birtley, 1951). In all studies it was recommended that a master control of the densities found in normal bone be established for purposes of comparison and evaluation. It was also recommended that a series of films be taken under standard conditions in order to observe the changes in mineral content. The latest developments have come from the Bone Research and Evaluation Center at the Pennsylvania State University. From this laboratory specially designed aluminum ladders have

been constructed, and calibration instructions have been carefully worked out. These are available to those desiring this type of equipment (McFarland, 1955). McFarland states that soft tissue variation is still a problem and attempts are being made to overcome this obstacle.

From a review of the present status of roentgenographic measurement of bone density, it can be concluded that even though it is possible to set up a system that is fairly accurate it requires extensive time and effort, and, therefore, is not practical for routine roentgenograms. At present all that is available is the judgment of the radiologist as to whether there is "slight," "moderate," or "severe" atrophy of bone. An indication of the severity of bone atrophy, however, is essentially all that is necessary in most instances.

The use of roentgenograms for the diagnosis of bone conditions which are a contraindication for specific therapy is not new. A case to the point is the use of x-rays for elderly mental patients who are being considered for shock therapy. Osteoporosis is a contradiction because of the fracture hazard involved (Somers and Richardson, 1939; Graves and Pignataro, 1940; Cook and Sands, 1941).

Roentgenograms can be used on a practical basis for the evaluation of bone atrophy, and it does seem advisable to have an estimation of the degree of bone atrophy in the involved extremities of the severely disabled who will require extensive physical rehabilitation. It can also be recommended that x-rays be taken near the onset of the disease or injury as a standard of comparison for later films. Information as to the status of bone in the involved extremities could then be used as a guide in the treatment of the patient during physical rehabilitation.

SUMMARY

1. Experimental and clinical disuse atrophy of bone has been reviewed with special reference to the occurrence of bone atrophy in the physically disabled.
2. Pathological fractures occur in severe cases of bone atrophy and are most frequently observed in children under the age of 10 with spinal cord lesions.
3. It has been noted that disuse atrophy of bone has received little attention in the evaluation and treatment of the physically handicapped.
4. The present status of roentgenographic estimation of bone atrophy has been reviewed for the purpose of determining the feasibility of utilizing roentgenograms in the evaluation of disuse atrophy of bone.
5. It has been recommended that roentgenograms be used routinely for the estimation of bone atrophy in the evaluation and treatment of the physically disabled who require extensive physical rehabilitation.

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Decubitus Ulcer Care

Isaac Burston, Elizabeth Austin, M. D. and Thomas P. Reeder, M. D.

Prevention of decubitus ulcers is of primary importance and requires constant vigilance particularly when the patient is a paraplegic.

Whether decubiti are of neurogenic or solely traumatic origin, or both, they usually occur when sensation is impaired and over bony prominences. The locations of the ulcers are directly related to the position of the patient. Thus early sacral ulcers are common. Breakdown over trochanteric regions occurs only when the patient can turn, while ischial tuberosity ulcers begin when sitting is permitted.

The level of the lesion also is responsible for the number and duration of ulcers. The higher the lesion, the more common the ulcer. Pollock illustrates this by stating that all patients with lesions above T_9 had ulcers, while only 30 per cent of those with lumbar cord involvement developed ulcers. Return of pain and temperature sense further reduced this number.

A realization of the importance of prevention of ulcers, coupled with an early militant program can reduce their number.

General medical treatment is of prime importance in preventing and controlling decubiti. Total serum proteins are frequently depleted; the A/G ratio may be reversed and hemoglobin may be very low. Without hemoglobin levels of 12 grams or more and adequate serum protein levels, decubiti occur quickly and are resistant to healing. Small repeated transfusions, a generous high protein diet, sometimes supplemented by amino acid, and vitamin supplements are therefore required. When dynamic care is available, these constitutional problems have decreased remarkably.

Urinary and bowel complications contribute to the incidence of decubiti, while the latter when present may light up bladder and kidney infection, one of the most common causes of death.

Enlightened nursing care is, however, still one of the most important preventative measures. The technic of dressings and care of the patient is most important. Local topical medications are of secondary importance.

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Nursing Procedures

Keep the patient clean and dry and be sure all sheets, pads, and other bed clothes are smooth. He should be placed on a sponge rubber mattress if possible and turned every two hours. If he is incontinent, a retention catheter or some form of drainage will be required. As soon as possible the patient should be encouraged to help himself with or without assistance of monkey bars, silence cloth tied to the foot of the bed, or other devices. If an inflated rubber ring is used to protect bony prominences, fill the ring only half full to avoid a hard ring that often produces a cut-like sore where the patient is lying. Casts, splints, and other orthopedic appliances should be carefully watched, for tight casts will form severe pressure sores. Paraplegics and other patients who are incontinent of both urine and feces show a marked tendency to develop bed sores associated with general debility and rapid muscular atrophy.

Daily, the patient's entire body should be washed with soap and water and followed by an alcohol rub of the entire back. All pressure points should be carefully inspected for reddening. When the patient shows signs of pressure on any part of the body, he should be turned on the opposite side immediately and propped with pillows. When his condition does not permit him to turn, there is usually a way of suspending the area above the mattress. This is most easily accomplished by putting a heavy flannel bandage 5 to 6 inches wide under the patient and tying both ends to a Bradford frame for periods of from one-half to one hour out of every three hours. Even a space of one inch between the patient and the bed will prevent deep pressure sores. A yellow sponge rubber is available that can be shaped ring-like or roll-like to place under any part of the patient's body to relieve pressure.

Inspection of areas which are liable to break down should be made daily by the staff and by the patient when possible, for ulcers may occur within a few hours or a few days. Adhesions, edema, and redness are thus reported at once.

Decubitus ulcers usually follow a pattern of

development. Knowledge of their natural history is of help in planning treatment.

Stage 1: Area is red with signs of irritation and slight swelling.
Stage 2: The areas are red and have edema with or without a rash.
Stage 3: The red areas show mild to moderate skin maceration with or without small blisters resembling second degree burns.
Stage 4: The red areas show both small and deep ulceration.
Stage 5: The areas are purple in color with large bullous water blisters.
Stage 6: The final stage shows a hard black crust covering a deep necrotic ulcer with a purplish-red border.

TREATMENT

Stage 1: *When the area is merely reddened with slight swelling and irritation,* the entire back should be washed with soap and warm water. Paint red area with compound tincture of Benzoin, dust the entire back with talcum or cornstarch powder. Turn patient if possible and prop with pillows or suspend with slings.

Stage 2: *When the reddened areas are accompanied by a rash and swelling,* wash the entire back with soap and water. Dry skin by sponging with alcohol. Give cold quartz ultraviolet for two minutes, about twenty inches from the body. Coat with 1.2.3. ointment (liquor ammonium acetate one part, lanolin three parts, Lassars zinc paste, anhydrous plain, two parts). Diaper patient; do not use any adhesive tape. Place him in the most comfortable position possible and then turn frequently.

Stage 3: *If small blisters appear with the red area and the skin has a maceration resembling second degree burns,* the area is cultured and sensitivity tests are requested. Wash the infected area with soap and water. The infected area is sponged or irrigated with Tyrothricin, 3 per cent solution, or Bacitricin 500 units per cc. and Neomycin sulphate 1 per cent in physiological salt solution is applied as a wet dressing. The latter has been most efficacious. After medication the infected area is dressed with dry sterile dressing, preferably without the use of adhesive tape. Make the patient comfortable and relieve pressure to the part as described above.

Stage 4: *When the red areas show small and deep ulcers,* wash the entire back with soap and water. Irrigate all infected areas with the solution noted above. Give cold quartz ultraviolet to the ulcers only for about four mintes at 20 inches distance, determining individual tolerance first. Paint around infected areas with compound tincture of Benzoin.

Moisten a pad of sterile gauze in a solution of equal parts of 50 per cent Ethyl alcohol and a saturated solution of boric acid and apply to the ulcer only. Build up around ulcers with abdominal pads so that the patient will not press on the ulcers.

Stage 5: *When purple areas appear with large water blisters that resemble bullosa impetigo,* DO NOT wash the patient with water. He should be placed on a rubber mattress immediately. Sponge the entire back with mineral oil, turn the patient to the prone position as much as possible, guarding however against ventral pressure points, and put a large cradle with a few lights over the patient. Do not dress blisters for six days. After the sixth day remove the mineral oil, give air-cooled cold quartz starting the first day with two minutes at 36 inches distance; increase to four minutes at 30 inches the second day; six minutes at 30 inches the third day; and ten minutes at 24 inches the fourth day. The latter is continued until healing occurs. If possible the treatment with air exposure and gentle heat is continued.

Stage 6: The most difficult ulcers to heal are those that show *purple red areas with swelling around all prominences with a hard black crust in the middle covering deep necrotic ulcers.*

Wash and scrub the entire back with soap and warm water. Rub briskly with a sponge of 50 per cent alcohol; paint surrounding areas with compound tincture of Benzoin and apply a heavy coating of sterile vaseline gauze on the black necrotic tissue only. In about 40 hours the black eschar will soften. Then remove all dressings unless there is bleeding, and put the patient into a tub with warm water and soap for twenty minutes if possible. Remove from tub, rub entire back with 50 per cent alcohol, paint around each sore with tincture of Zephrin 1:1000 and remove all necrotic tissue with sterile instruments. Cultures are again taken. Cover all healthy areas around the sores, expose the actual ulcers only and give a destructive dose of ultraviolet by putting the cold quartz lamp one inch from the ulcer and exposing the area for four minutes. Sprinkle sulfanilamide, sulfathiazole or sulfadiazine powder over the ulcer. Pack with sterile dry gauze.

Dress as follows: a hole the size of the ulcer is cut in the center of an abdominal pad, which is applied to the area. Additional padding can be added as needed to take pressure off the area — each pad having a slightly smaller hole than the one below it. Use 2-inch tape around the edges of the dressing, so it will be half on the dressing

and half on the skin. Do not put tape near the edge of the affected area if it can be avoided and do not seal dressing with tape as it forms a urine compress.

At the time of the second dressing, irrigate the ulcer with modified Dakins solution. Give ultraviolet to the entire body using the cold quartz lamp for four minutes at 20 inches distance, or air cooled quartz five minutes at 30 inches distance. Fill each ulcer with granulated sugar, dress with only sterile material and relieve pressure by padding as described above. Sugar is packed into the area because it forms a hypertonic solution, helps to reduce edema and thus encourages circulation to the area. Use it until the area is clean and begins to granulate, then discontinue, and thereafter continue cold quartz ultraviolet. Use dry sterile dressings and observe strict surgical technic. When too much granulated tissue develops, touch it with silver nitrate. Do not use any medication after silver nitrate has been used as it will extend the area affected by the silver nitrate beyond the limits of the ulcer.

If bleeding occurs during any treatment period reapply the dressing immediately without the ultravoilet irradiation. If necessary, spray the bleeding part with topical thrombin solution using a 25 cc. luer with a No. 18 needle to mix and spray. A more simple method is to apply Oxycel gauze. If bleeding is from deep structures and is not easily controlled, call the doctor immediately.

The best results are obtained when the patient can be put in the tub with water agitation at least three times a week.

Ideal treatment includes early skin grafting as soon as the ulcer has a clean base. In some instances the bony prominence underlying the ulcer is also removed. This treatment shortens healing time and reduces hospital days. Decubiti can be healed, however, with conservative means, if ancillary medical care is excellent.

Establishing Physical Objectives in the Rehabilitation of Patients with Parkinson's Disease (Gymnasium Activities)

David S. Bilowit, M.A.

Among the problems encountered in the neuromuscular rehabilitation of patients with Parkinson's disease is difficulty in initiation of motion. With inability to initiate motion, activity becomes limited. Limitation of activity is conducive to weakening of muscle groups, disuse atrophy, inability to perform through a complete range of motion, development of contracture of the antagnostic muscles. Antigravity motions and elbow extension are the most commonly limited movements. If the parkinsonian patient succeeds in initiating a motion, he has the ability, unless contractures are present, to perform through a range of motion and is capable of performing static (isometric) contractions.

The author initiated a program of gymnasium activities specifically designed to overcome the limitations of the Parkinson patient and to supplement the patients' individualized exercise program.

Exercise Therapist, Veterans Administration Hospital, East Orange, New Jersey.

The basic principles incorporated in all of the activities are:

1. Establishing a physical objective for every motion.
2. Establishing a rhythmic pattern of movement to attain timing.

Using a punching bag to formalize motion

In addition to exercising the muscle groups indicated for specific movements, an activities program requiring the use of these muscle groups was instituted to supplement the formal exercises. It was found that the type of motion peculiar to striking a punching bag was beneficial for in-

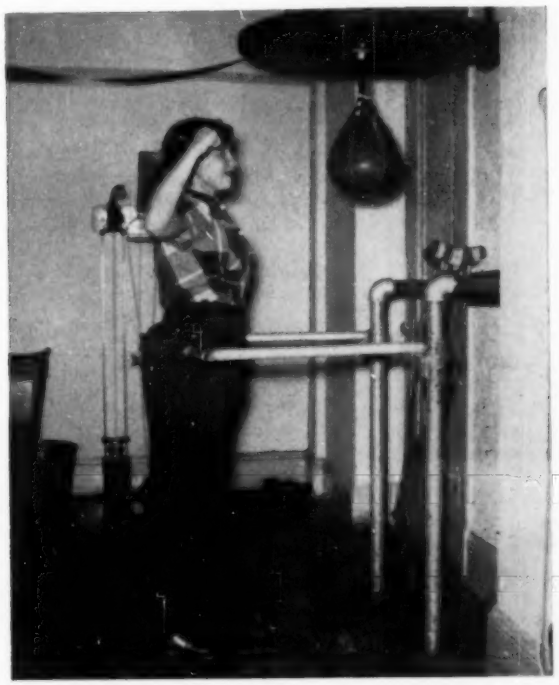

Figure 1. Specially adapted stand to assist patient in maintaining erect position.

creasing strength and range of motion when other methods proved unsuccessful.

The program instituted by the writer incorporated these findings. Mild stretching was followed by exercises with manual resistance. These were augmented by a series of exercises on the speed bag, and ambulation training.*

For those patients unable to remain erect while punching the bag, a special stand was designed and built by Bilowit and Hushelpeck, to prevent the patient from falling (See figure 1). Support was applied about the hips, leaving the upper body free, thus requiring stabilization of the trunk muscles for the patient to maintain his trunk in an erect position.

The primary objective of the punching bag exercise was to overcome the patient's inability to extend the elbow and flex the shoulder simultaneously, a motion necessary for many tasks in daily living. Contributions were also made toward better coordination and balance.

All participating patients were unable to actively extend the elbows through full range of motion in the sitting or standing position prior to treatment. The technic employed was first to teach the patient a left jab. This type of punch was emphasized because of the muscles involved in the action. Patients were taught to follow through by aiming at a point beyond the bag. They did not stop when contact was made with the punching bag so that there was a complete follow-through.

In all instances, the patients were eventually taught to use both arms in coordinated motion, when punching the bag. After motion was initiated patients had little trouble continuing the punching motion. With success in this activity, a marked sense of achievement followed.

As fatigue approached, range decreased. Exercise sessions were timed to the individual patient's tolerance and, as soon as maximum range could no longer be maintained, the patient was allowed to rest. It was found that strength and range of motion increased in the desired areas only when exercised primarily in that range.

Over a period of 2½ years (1950-1952), 8 patients were treated employing these technics. Prior to the exercise therapy, these patients were receiving palliative drug therapy, but still ex-

* At Kabat-Kaiser Institute for Neuromuscular Rehabilitation, Washington, D. C., under supervision of the author and medical supervision and direction of J. Vivino, M.D.

hibited retrogression. In all cases there was improvement in the areas exercised due to increased strength, ability to initiate motion, range of motion, and relaxation. These improvements could be attributed only to the exercises.

Integrating activities and objectives

During this period, the author observed these phenomena:

1. *Patients could not visualize an activity.* The patient needed a physical objective. This was first noted in ambulation training. Patients shuffled, even though repeatedly told to lift their feet as though stepping over something. After lifting their feet for one or two steps, they again began to shuffle. These same patients, however, were able to successfully step through an obstacle course consisting of obstacles from two to eight inches in height. These patients also successfully climbed and descended a flight of steps. In so doing, they flexed one hip and knee and extended the supporting extremity as far as possible to facilitate clearance of the step while ascending.

2. Performance of all patients improved when the objective was to accomplish an activity rather than an anatomical motion. Instead of having the patient flex the shoulder and extend the elbow, we had him catch a ball requiring the same motion. In ball catching activities the patient is not concerned with individual motions such as shoulder flexion, elbow extension, and finger flexion. Rather, his attention is focused on accomplishing the task at hand—catching the ball—without conscious realization of the movements involved.

During the past year, a similar program was carried out with a broadened scope of activities following prescribed exercises.† The same results were observed with 3 patients. Two showed improvement, 1 was discontinued for other reasons.

SUMMARY

Since there is no available cure for Parkinson's disease, symptomatic treatment is acceptable. As a complement to prescribed medications, exercises to alleviate specific deficiencies are indicated.

From clinical experience, a new technic in the physical rehabilitation of patients with Parkinson's disease was evolved in accordance with these basic principles:

1. The establishment of a physical objective for each motion.
2. The establishment of a rhythmic pattern of movement to attain timing.

The following activities, as an adjunct to specific exercises, were especially successful:

1. Punching the speed bag (for upper extremities),
2. Stair climbing (for lower extremities),
3. Throwing, catching, kicking a volley or soccor ball (for coordinating movements of all extremities).

The application of the program advocated for the physical rehabilitation of patients with Parkinson's disease has been beneficial to the patients and there have been no detrimental effects.

† At V. A. Hospital, East Orange, N. J., Physical Medicine and Rehabilitation Service, under supervision of the author and medical supervision and prescription of T. J. D. Scanlan, M.D., Assistant Chief, Physical Medicine and Rehabilitation.

Suggested Recruitment Tie-ins During April

National Boys' Club Week	April 2-8
Medical Education Week	April 22-28
YMCA Week	April 22-28

Make your contacts and finalize your tie-in plans as early as possible. Get in touch with your Recruitment Chairman for suggestions or write your National Office. Arrange for tie-in publicity with these agencies' newspaper, TV and radio publicity. Plan display tie-ins for your APTA recruitment poster and recruitment literature in windows, in local agencies' exhibits, in libraries, in high schools, in junior colleges and universities.

SCHEDULE SHOWINGS OF YOUR SOUND FILM AND COLOR FILMSTRIP

JOIN
and Serve

Use of Volunteer Workers in a Physical Therapy Section

Ozella L. Scruggs, B. S.

Volunteer workers, selected and oriented through the joint efforts of Special Services and the Physical Therapy Section, are making splendid contributions to the efficient operation of the Physical Therapy Section of the Veterans Administration Hospital, Oklahoma City, Oklahoma.

Physical therapy volunteer workers are selected for their kindly manner and for their interest in the complete rehabilitation of the patient. Before beginning their service they are given special orientation in the Physical Therapy Section with an elementary explanation of the use of the various equipment and instructions for their special assignments.

The volunteer program in the Physical Therapy Section is divided into three main groups:

I. Making devices

II. Self-care evaluation

III. Miscellaneous duties

- A. Washing and rolling bandages.
- B. Housekeeping in the department
- C. Escort service
- D. Office work

I. Making Devices

The following prescribed devices for patient use, during the hospital stay and after discharge, are made by the volunteers:

A. *Neck traction devices.* Outing flannel was found to be the most suitable material. The volunteers are given patterns, the neck slings are made by them in the Occupational Therapy Section, and are fitted to the individual patient.

B. *Holding mittens for use with overhead pulleys.* These washable mittens are made of muslin, mending tape and webbing.

C. *Neck and contour pillows.* These pillows are made of muslin with removable covers.

D. *Small foot and knee pillows.* These small pillows are invaluable for support during treatment of patients, as well as for maintaining the proper bed position following treatment. They are also made of muslin with removable covers.

E. *Arm and leg slings.* These slings are used by the patients during performance of unassisted exercises in bed. They are made of muslin or canvas, as needed.

F. *Bags for weights and sand.* These are made in various sizes according to the individual patient's need. They are

Figure 1. Self-care evaluation for guidance of ward personnel is performed by a volunteer worker. Supervision by a physical therapist is necessary.

Chief, Physical Therapy Section, Physical Medicine Rehabilitation Service, Veterans Administration Hospital, Oklahoma City, Oklahoma.

Figure 2. A supply of clean elastic bandages is always available when volunteer workers are responsible for this task.

Figure 3. Volunteers provide escort service to and from the department with elimination of avoidable delays for the patient and the physical therapist.

valuable for use in a resistive exercise program at home.

G. *Deltoid assistors.* Since commercial assistors have not always proven satisfactory, the volunteers have just begun the project of making the leather portion of the assistor to fit each patient and these are proving very satisfactory.

II. SELF-CARE EVALUATION

At the present time the self-care evaluation tests are given by a volunteer under the supervision of the chief physical therapist. The volunteer assigned to this program worked in physical therapy during service in the Women's Army Corps. She understands the importance of and is interested in the self-care evaluation tests as related to the complete rehabilitation of the patient. She has supplied some of the articles necessary for completion of the tests. At present only one volunteer is needed to give the tests; however, as the patient load increases additional volunteers will be

trained. A copy of the completed self-care evaluation test is displayed at the bed of the patient as guidance to the ward personnel in order that the patient may carry out all activities of which he is capable.

III. MISCELLANEOUS DUTIES

A. Washing and rolling bandages.

The volunteers wash, dry, and roll the elastic bandages and store them in supply cabinets until ready for use.

B. Housekeeping in department.

The volunteers assist the physical therapists by changing linen, folding and distributing linen, dusting, filling oil and alcohol bottles, and helping in the routine maintenance of the department.

C. Escort service.

An escort service is maintained for transporting wheel chair and litter patients to the clinic and for returning them to the ward following treatment. During the orientation program, the volunteers are taught how to assist the patients to and from wheel chairs and litters.

D. Office work.

In the absence of the secretary, the volunteers answer the telephone, file attendance cards, and type routine exercise and attendance lists.

Due to the small number of volunteers used in the section, it is possible to give individual instruction. The volunteers come on different days and from varying distances so that group meetings are not possible at the present time. Physical limitations are usually the determining factors in the assignment of duties. The majority of our volunteers, who are interested in making the devices, are of the older age group.

Carefully screened volunteers render an invaluable service to the patients and the staff in physical therapy by making devices, by assisting in the self-care evaluation program and by performing miscellaneous duties which make the section run more efficiently.

Suggestions from the Field

A Versatile Staircase Apparatus

Herma James, B.S., and John L. Grove, B.S.

The importance of a staircase apparatus is universally recognized by those engaged in the field of physical medicine and rehabilitation.

Certain unique features have been incorporated in the design and construction of our apparatus.

DESCRIPTION

A square central platform is approached on each side by a set of steps of different height. The steps and platform are made of birch wood and are covered with rubber treading. The handrails are of stainless steel.

From the Physical Therapy Department, Mt. Diablo Therapy Center, Walnut Creek, California.

DIMENSIONS

There is a choice of steps of 2, 3, 4, or 6 inches in height, rising to a platform 12 inches high. Each step is 15 inches deep. The stairs are 4 feet wide. The whole apparatus covers about 72 square feet of floor space.

FEATURES

Each set of steps (except the single 6″ riser) is easily detached from the common platform by unscrewing 2 butterfly type stud bolts recessed beneath the top step. This allows use of any combination of direction or height of stair units, one relative to the other.

This feature of detachability gives the apparatus the added feature of portability. Any or all units can be detached and moved by one physical therapist.

Each unit has its own pair of handrails. The handrail uprights have threaded collars allowing each handrail to be raised or lowered independently. Furthermore, each upright can be moved separately by the use of a sliding joint

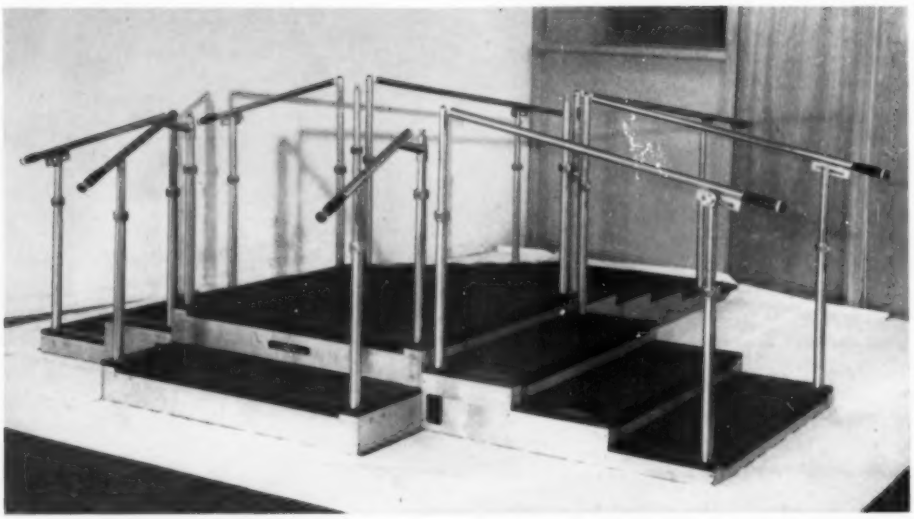

Figure 1.

where it meets the handrail. This allows any desired modification to be handled by one therapist. Each rail adjusts from 27 to 48 inches.

If the apparatus is used without one of the stair units, a handrail can be added to the open side of the platform for convenience and safety.

The staircase was built and donated to the Center by the Shell Chemical Corporation, Pittsburg, California.

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Editorial

While it is frequently necessary for an editorial writer to call attention to faults and to be critical of existing difficulties, it is also just as important to emphasize the positive side of the picture. This, understandably, is a much more pleasant task. During the past months there have been a number of situations which have required critical comment but, with all of this, the functioning of the Association and of its individual members is continually improving and this is gratifying in many respects. Far too often, when improvement and progress are resulting, it is a human fault to take this good for granted and fail to give a much needed boost for tasks well done. Let us then consider for the moment some of the praiseworthy aspects at both the local and the national level.

We speak frequently of chapters as working units of the whole organization, constantly emphasizing the importance of these groups as the core of the Association. There is little doubt as to the truth of this, for only at this local level can there be implementation of policy and realization of progress. But what do we really mean when we use the term? Obviously we refer to *individuals*, each successfully, and often at great personal sacrifice, completing assigned tasks and ever alert to planning for the future. This is one of the positive assets of any professional organization and all too often, one which receives the least recognition. It is among these people who "keep the wheels turning" that we often find the truly dedicated member. They are the ones who fully understand the obligations of a professional person and who, by their efforts, gain for all of us prestige and standing.

Your own chapter certainly has its share of these physical therapists willing and able to devote hours of their time for the benefit of all. Committee chairmen, officers, workers on special projects and committee members are a few we can name. Let us not forget to appreciate their immeasurable contributions simply because we may not see them at their assigned jobs. Herein lies one real reason for the success and growth of physical therapy as a true service profession and our future growth is dependent upon them and others like them.

Editorial

Another source of strength and progress, who like the organizational worker, is often taken for granted is the able clinical physical therapist. By doing his job well and giving service beyond what is asked, he reinforces the reputation of every other member of the profession. Every reputation is founded on the quality of the product; ours is the day by day results we get from serving the patient well. Physical therapy has reached its present level of success not only because of a fine National Office, able officers and chapter workers, but through the support given them by the important individual who maintains high standards of service and *is* the profession. We need fear encroachment of our field only when we, as individuals, fail to do our single jobs. The true art and science of physical therapy can not be legislated, can not be ordered, can not be demanded. It is, however, provided by the working physical therapist who demonstrates excellence in performance and a feeling for service to his job.

Marriages

Dana L. Blakkolb, of San Jose, Calif., now Mrs. Dana B. Doolittle, Anaheim, Calif.

Ann Broad, of Canton, Ohio, to Jesse Pittman, Minneapolis, Minn.

Blanche Church, of Houston, Texas, now Mrs. Blanche C. Smith, Houston.

Rose Marie Craft, of Sunset Beach, Calif., to B. M. Dennis, Sunset Beach.

Lois Dock, of Cincinnati, Ohio, now Mrs. Lois D. McComb, Mt. Clemens, Mich.

Betty Jean Edwards, of Hialeah, Florida, now Mrs. Betty E. Baughman, Miami, Fla.

Elizabeth Goddard, of Coral Gables, Fla., to Frank Calabrese, Coral Gables.

Ursula Goldschmidt, of Berkeley, Calif., now Mrs. Ursula G. Batz, Mission San Jose, Calif.

Ruth Gray, of Montgomery, Ala., to James E. Godwin, Montgomery.

Barbara Hultquist, of Salt Lake City, Utah, to Alfred S. Kimball Jr., Salt Lake City.

Constance W. Jenks, of Durham, N. C., to Robert S. Peake, Durham.

Elizabeth Jones, of Milwaukee, Wis., to Maurice F. Keefe, Milwaukee.

Fay Ann Knickerbocker, of Gainesville, Ga., to William S. Myers, Winston-Salem, N. C.

Margot L. Meyer, of Salt Point, N. Y., to Harry E. Richter, Poughkeepsie, N. Y.

Mary L. Perkins, of Seattle, Wash., to Melvin E. Norby, Kennewick, Wash.

Mary L. Ratcliffe, of Portland, Ore., to Robert W. Smith, Fresno, Calif.

Patricia Rogers, Bucyrus, Ohio, now Mrs. Patricia R. Conrad, Bucyrus.

Louise Skarin, of Taegu, Korea, to William A. Grubb, Taegu.

Diane Skinner, of Cedar Rapids, Iowa, to W. E. Bohlander, Cedar Rapids.

Dorothy Trujillo, of Los Angeles, Calif., now Mrs. Dorothy T. Gosden, Los Angeles.

Eileen Webster of Boston, Massachusetts, passed away on January 25, 1956. Miss Webster, a graduate of Boston School of Physical Education, had been associated with the Children's Medical Center, Boston, since completion of her physical therapy education at Harvard Medical School, Courses for Graduates, in 1946. Miss Webster worked with the Children's Medical Center poliomyelitis emergency team during missions in Texas and Missouri. She was a member of the Association and of the Massachusetts Chapter having served as Chairman of local arrangements for the Annual Conference held in Boston in 1949.

Mary Dorothea Thompson of Dennis Port, Massachusetts, passed away on January 1, 1956. Miss Thompson, a graduate nurse, received her physical therapy training at the Pennsylvania Orthopedic Institute, Philadelphia, Pennsylvania, and later attended a summer course in physiotherapy sponsored by Harvard Medical School. After several years of employment as a physical therapist, she returned to the nursing profession. Miss Thompson had been a member of the Association since 1926 and was a member of the Massachusetts Chapter.

Speakers at Second Congress

GERTRUD BEST, M.D., is Assistant Doctor, Orthopedic Hospital, Cologne University, Cologne, Germany, and is Director of the School of Physical Therapy, Cologne University. Dr. Best also served as Assistant Doctor at the Pathological Institute and Neurological Hospital, Cologne University, for two years. Prior to her medical education, Dr. Best was a physical therapist for six years, having received her physical therapy education in Berlin. At the Second Congress Dr. Best will discuss "Exercises for Spondylitis Deformans."

DOROTHY M. IDDINGS is Clinical Supervisor, Southwestern Poliomyelitis Respiratory Center, Houston, Texas, and will be a co-participant in the presentation, "Convalescent Program for the Severely Disabled," at the Second Congress. Miss Iddings, a graduate of Marshall College, received her physical therapy education at O'Reilly Army General Hospital and served as a staff physical therapist there. Miss Iddings was Clinical Director of Physical Therapy, University of Illinois, Research and Educational Hospitals, Chicago, Illinois, prior to her acceptance of her present position in 1952. Miss Iddings was one of the contributors to the book *Treatment of Acute Poliomyelitis.*

MIRIAM JACOBS, Instructor, D. T. Watson School of Physiatrics, Leetsdale, Pennsylvania, is a graduate of this school and of Seton Hill College. Miss Jacobs will participate in the panel discussion on "The Role of the Physical Therapist in the Evaluation Studies of Poliomyelitis Vaccine Trials." Miss Jacobs served in the Poliomyelitis Field Studies, 1951-1952; as instructor to the orientation programs for physical therapists during the Gamma Globulin Evaluation Program conducted by the U. S. Public Health Service in 1953; and during the Poliomyelitis Vaccine Field Trials in 1954. She is author of "The Role of the Physical Therapist in the Gamma Globulin Poliomyelitis Prevention Study" and "A Study of the Reproducibility of Muscle Testing and Certain Other Aspects of Muscle Scoring" published in the *Physical Therapy Review.*

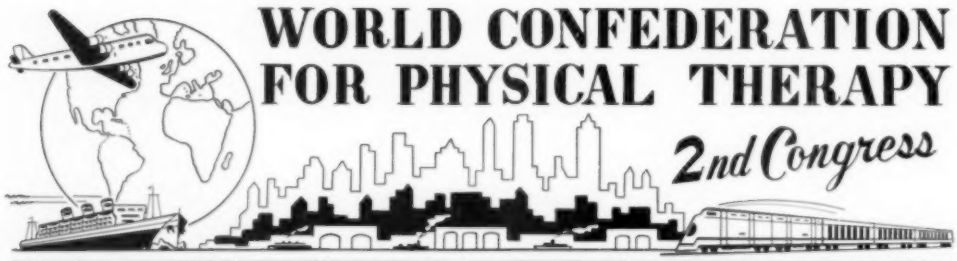
MARTA LINDSTROM is a member of the staff of the Orthopedic Clinic, Gothenburg, Sweden, where she specializes in physical therapy for correction of postural problems. She assists in the orthopedic examinations of the pupils of the elementary schools of Gothenburg. Miss Lindstrom received her physical therapy education at the Swedish Gymnastic Institute and was a teacher of corrective gymnastics for several years. Miss Lindstrom has participated in numerous congresses, lectures, and demonstrations related to posture. She is co-author of "A Handbook of Gymnastics for Children" and "Exercises for the Feet." Miss Lindstrom will present "The Effect of Physical Therapy on Pathological Postures."

MARY E. KOLB is a graduate of Seton Hill College and D. T. Watson School of Physiatrics, Leetsdale, Pennsylvania, and is now an Instructor at the D. T. Watson School. Previously Miss Kolb was Director, Hermann School of Physical Therapy, Houston, Texas; and Instructor, School of Auxiliary Medical Services, Division of Physical Therapy, University of Pennsylvania. During her experience as an instructor, Miss Kolb has taught applied physics and "Principles of Underwater Exercise" which will be her subject on the Congress program.

MARY H. MARTIN is a graduate of the University of Toronto. Her first physical therapy experience was with the Canadian Navy during World War II. In 1945 she accepted a position with the Department of Veterans Affairs in Vancouver, and in 1947 she was appointed chief physical therapist at the D.V.A. hospital in Victoria.

At present Miss Martin is senior physical therapist with the Ontario Division of the Canadian Arthritis and Rheumatism Society. She is president of the Canadian Physiotherapy Association.

Miss Martin is the author of "The Physiotherapist's Role in the Treatment Team" which was published in the *Journal of the Canadian Physiotherapy Association*. She will present "Why Home Care for the Chronically Ill?" during the general session—The Community Rehabilitation Program.



JUNE 17—23, 1956 · HOTEL STATLER · NEW YORK, N.Y.

Intermediate Program — See January *Review* — Reprints as well as enrollment forms are available from the National Office.

Advance Enrollment as of February 1

Full members		742
USA 553	other countries 189	
Social Associates		23
USA 15	other countries 8	

Your advance enrollment is deeply appreciated and is very helpful in advance planning. The Congress Planning Committee decided to give an additional opportunity for enrollment at $10.00, extending the deadline until May 1. After May 1, the following schedule will be in effect:

Full members	$12.00
Students	6.00
Social Associates	10.00

Boat Trip around Manhattan

Monday June 18, from 6:00 to 9:00 P.M., "This is New York" is being planned by the Greater New York District of the New York Chapter.

A three-hour boat trip, box supper and bus transportation to the boat are $3.50. Family members and friends may be included. It will be fun for all. The Committee which consists of

Oscar Walker, *Chairman*
Elizabeth Addoms
Owen Tester
Dorothy Buck

will deeply appreciate your advance reservations since this is on a Monday night and orders for the suppers must be placed on the Saturday before.

Banquet

Wednesday night, June 20.

Guests may be included and need not be registered as Social Associates.

Entertainment

Those who attended the Dallas Conference will recall with pleasure the wonderful presentation by the Modern Dance Group of the Texas State College for Women. They will present a typically American program including a suite of dances on the life of that colorful character Sam Bass, entitled Sun and Sage.

Exhibits

Technical exhibitors (February 1)	34
Scientific	25

Film Theatre

There will be a daily showing beginning on Tuesday of films from abroad and the U.S.A.

Tours and Educational Courses

See January *Review* — Advance reservations are advised.

Congress Planning Committee

Catherine Worthingham, *Chairman*
Harriet Lee
Florence Linduff
Hazel Stephens
Cora Alice Taylor
Mildred Elson
Marjorie Spence (Canada)

This Committee has had six meetings beginning January 1954 to plan this great and extraordinary event, the Second Congress of the World Confederation for Physical Therapy. The Committee has been fortunate to have Mr. Stanley Henwood, Secretary of the International Poliomyelitis Congress, sitting with them at most of its meetings, through the kindness of Mr. Basil O'Connor, President of the National Foundation for Infantile Paralysis. Others who have met with the Committee are M. Joyce Neilson, Hon. Secretary of the World Confederation for Physical Therapy, Mary Nesbitt, President of the Ameri-

can Physical Therapy Association, and Eugene J. Taylor of the *New York Times*.

The Committee's work is virtually complete and the job of implementing it now rests with the staff of the National Office and the working committees of the New York Chapter. The American Physical Therapy Association and the World Confederation for Physical Therapy are extremely grateful for the many hours of work which the Committee gave so generously and so enthusiastically to provide a scientific program supported by exhibits and films of which every physical therapist may be proud. You will note that at least twenty-seven physical therapists from eight countries will be on the program.

Public Relations

We have been fortunate in obtaining the services of Mr. George Schless to take over the big job of publicizing the Congress in the press, T.V., and radio.

Chapter Contributions now total $3,893.24 New contributions in February:

Southwestern Ohio District	$ 26.00
Massachusetts Chapter	500.00
Western Michigan District	61.00
Northern Texas Chapter	52.65
Mrs. Ellen Pryor	1.00
California Rehabilitation Center	25.00
Western Missouri Chapter	47.00
Southern California Chapter	55.00
Santa Barbara Chapter	29.00
Maryland Chapter	20.00
Indiana Chapter	75.00
Nevada Chapter	7.00
Ruth H. Sprague	1.00
Alabama Chapter	16.00

APTA-OVR Institute

Name:

Institute on the Correlation of Physiology with Therapeutic Exercise

Dates:

April 16 through 20, 1956

Location:

Extension Study Center, University of Oklahoma, Norman, Oklahoma

Objective:

To improve the quality of teaching and to encourage better correlation of basic sciences and technical instruction in basic physical therapeutic education programs

Eligibility Requirements:

Admission will be limited to physical therapists who are instructors of physiology and of therapeutic exercise in the thirty-five approved schools, as well as in Marquette University and Ohio State University (currently awaiting approval from the Council on Medical Education and Hospitals of the American Medical Association).

Program:

Monday, April 16, 1956

9:00 Greetings — Mary E. Kolb, Chairman Institute Planning Committee
9:30 Exercises for Improvement of Muscle Strength — Sara Jane Houtz
10:45 Sara Jane Houtz (continued)
1:30 Physiological Basis — H. J. Ralston
3:30 Small Group Discussion
4:15 General Discussion and Problem Clinic

Tuesday, April 17, 1956

9:00 Exercises for Endurance — Laura Smith
10:45 Physiological Basis — Ernst Fischer
1:30 Physiological Basis — Ernst Fischer
3:30 Small Group Discussion
4:15 General Discussion and Problem Clinic

Wednesday, April 18, 1956

9:00 Range of Motion — Florence Kendall
10:45 Physiological Basis — H. J. Ralston
11:30 Range of Motion — Florence Kendall
1:30 Physiological Basis — H. J. Ralston and others
3:30 Small Group Discussion
4:15 General Discussion and Problem Clinic

Thursday, April 19, 1956

9:00 Volitional Movement — Ernst Fischer
10:45 Methods Used to Elicit and Reinforce Muscular Response — Laura Smith, Sara Jane Houtz
1:30 Methods Used to Elicit and Reinforce Muscular Response — Edna Blumenthal
3:45- Methods Used to Elicit and
5:00 Reinforce Muscular Response — Signe Brunnstrom

Friday, April 20, 1956

9:00 Methods Used to Elicit and Reinforce Muscular Response — Signe Brunnstrom
10:45 Physiological Basis — Ernst Fischer
11:15 Small Group Discussion
1:30 General Discussion and Problem Clinic
3:30 Summary and Evaluation

Dr. Malcolm T. MacEachern

Dr. Malcolm T. MacEachern, a leader in the field of hospital administration, died of a cerebral hemorrhage at his home on February third.

At the time of his death, Dr. MacEachern was director of professional relations of the American Hospital Association. He had been associate director of the American College of Surgeons from 1923 to 1949, when he became director. He became Director Emeritus of the ACS in 1951, and in March of that year joined the American Hospital Association as director of professional relations.

Dr. MacEachern founded the Program in Hospital Administration at Northwestern University in 1943 and directed the course until 1955, when he became honorary director. From 1943 to 1948, he also was associate professor of medicine at Northwestern University's medical school.

The name of Dr. MacEachern is synonymous with the hospital standardization program of the American College of Surgeons, forerunner of the Joint Commission on Accreditation of Hospitals. He was one of the founders and pioneers in the development of this movement from its start in 1913.

Dr. Edwin L. Crosby, director of the American Hospital Association, said, "The death of Dr. MacEachern deprives us of a most valued coworker. He was a great pioneer, devoted to the improvement of patient care in hospitals."

Dr. MacEachern was born at Argyle, Victoria County, Ontario, Canada, on August 27, 1881. In 1910, he received the degree of Doctor of Medicine and Master of Surgery from McGill University Medical School in Canada.

Short Term Course

Announcement has been received of the following postgraduate prosthetics course offered to physicians, surgeons, prosthetists, physical and occupational therapists, who are properly qualified and experienced in their field of specialty.

Name of Course

Above-Knee Prosthetics Courses

Sponsor of Course

College of Engineering and Postgraduate Medical School of New York University

Dates of Course

Prosthetists' Course—April 2 to 13, 1956
Physical Therapists' Course—April 5 to 13, 1956
Physicians' Course—April 9 to 13, 1956

Note: Priority for admission is limited to persons from the New England States and New York State

Course Content

Course #742 includes lectures, demonstrations, laboratory and clinical practice and is designed primarily to provide qualified physical therapists with knowledge and technical competence pre-prosthetic and prosthetic training

Tuition

Physicians' Course — $125.00
Prosthetists' Course — $100.00
Physical Therapists' Course — $75.00

Living Accommodations

Living accommodations convenient to the school are available at reasonable rates. Information and assistance in obtaining reservations may be had upon request.

Further information may be obtained from:

New York University
Postgraduate Medical School
550 First Avenue
New York 16, N. Y.

Chapter News

Connecticut

The chapter has announced an educational program for Saturday, March 24th from 10 A.M. to 3:30 P.M. This will be an Introduction to the Technics of Neuromuscular Facilitation led by Dorothy Voss who will be assisted by Lena Wulf and Mildred Grillo. The program will be given at the Crippled Children's Workshop in Bridgeport and Association members may register on payment of a $2 fee.

Coming Meetings

1956 Industrial Health Conference
April 21-27
Philadelphia, Pennsylvania

Association Activities

Nominations for 1956-1958

The Nominations Committee submits the following slate for officers, directors, and members of the Nominations Committee for 1957-58.

The candidates have been carefully considered and selected on the following merits: professional and personal qualifications; leadership qualities; participation in Association activities; ability to work together as a group; participation in civic and community affairs; intellectual honesty and integrity; availability.

Every member has the privilege of participating in the election of officers by attending the meeting of his chapter at which delegates to the House of Delegates are instructed. All are urged to exercise this privilege in selecting our Association leaders for the next two years.

Signed

FLORENCE LINDUFF
CAROLYN BOWEN
ANTHONY DE ROSA
RUBY DECKER
RUBY OVERMANN

FOR PRESIDENT

Edna Blumenthal, Director of Rehabilitation, North Carolina Cerebral Palsy Hospital, Durham, North Carolina

Association member since 1932

Chapter positions: Secretary, Southern Ohio District; Corresponding Secretary, Maryland; Secretary, Carolina; Chairman, North Carolina District; Director, North Carolina Physical Therapy Association, Inc.

National positions: Member, Committee on Nominations

Other positions: Member, North Carolina State Examining Committee of Physical Therapists

E. Jane Carlin, Assistant Professor and Assistant Director, Division of Physical Therapy, University of Pennsylvania

Association member since 1942

Chapter positions: Chairman, Education Committee, Pennsylvania; President, Pennsylvania

National positions: Speaker, House of Delegates

Other positions: Editor-in-Chief, *Physical Therapy Review;* Education Consultant, National Office staff

FOR VICE PRESIDENT

Anthony J. DeRosa, Coordinator, Rehabilitation Program, Burke Foundation, White Plains, New York

Association member since 1949

Chapter positions: Chairman, Greater New York District; President, New York; Chairman, Public Relations Committee, Greater New York District

National positions: Member, Committee on Nominations

Other positions: Association representative, Chartered Society of Physiotherapy Diamond Jubilee

Helen Vaughn, Coordinator of Physical and Occupational Therapy, Bureau of Maternal and Child Health, District of Columbia Department of Public Health

Association member since 1943

Chapter positions: President, Georgia; Chairman, Legislation Committee, Georgia

National Positions: Member, Advisory Committee to Professional Services

FOR SECRETARY

Louise A. Bailey, Physical Therapy Consultant, National Society for Crippled Children and Adults, Chicago, Illinois

Association member since 1937

Chapter positions: Vice-President, Hawaii; President, Hawaii

National positions: Director; Chairman, Committee on Nominations; Member, Committee to Study Department of Professional Services; Member, Advisory Committee to Professional Services

Dorothy C. Schumer, Senior Assistant Physical Therapist, United States Public Health Service Hospital, Staten Island, New York

Association member since 1946

Chapter positions: Chairman, Membership Committee, New York; Secretary, New York; Chairman, Education Committee, Greater New York District; Vice-Chairman, Greater New York District; Chairman, Greater New York District

National positions: Member, Advisory Committee on Chapter Activities

FOR TREASURER

James Bauer, Assistant Professor, School of Physical Therapy, University of Connecticut

Association member since 1951

Chapter postions: President, Connecticut; Chairman, Education Committee, Connecticut

National positions: Member, Finance Committee

Dorothy G. Hoag, Technical Director, Curriculum in Physical Therapy, University of Colorado

Association member since 1944

Chapter positions: Treasurer, Colorado; Chairman, Exhibits Committee, Colorado; Chairman, Nominations Committee, Colorado; Chairman, Education Committee, Colorado; Director, Colorado

National positions: Treasurer

FOR SPEAKER OF THE HOUSE OF DELEGATES

Lt. Col. Agnes P. Snyder, Assistant Chief, Army Medical Specialist Corps; Chief, Physical Therapist Section, AMSC, Office of the Surgeon General, Department of the Army, Washington, D. C.

Association member since 1941

Chapter positions: Chairman, Southern District, Texas
National positions: Member, Committee on Nominations

Member, Advisory Committee on Professional Education

Lt. Col. Audrey A. Underkofler, Physical Therapy Consultant, Air Training Command, USAF; Chief Physical Therapist, USAF Hospital, Scott Air Force Base, Illinois

Association member since 1942

Chapter positions: Chairman, Exhibits Committee, District of Columbia; Vice-President, District of Columbia

FOR DIRECTOR

(Two to be elected to serve terms of four years)

Dorothy I. Briggs, Assistant Professor of Physical Medicine, University of Wisconsin Medical School

Association member since 1949

Chapter positions: Chairman, Program Committee, Wisconsin; Chairman, Public Relations Committee, Wisconsin; Chairman, Nominations Committee, Wisconsin

Hazelle M. Erickson, Rehabilitation Coordinator, University of Minnesota Hospital, Minneapolis, Minnesota

Association member since 1944

Chapter positions: Chairman, Public Relations and Exhibits Committee, Minnesota; President, Minnesota

Dorothy A. Graves, Associate Professor, Department of Physical Therapy, University of Southern California

Association member since 1933

Chapter positions: Secretary, Southern California; Secretary-Treasurer, Southern California; Chairman, Program Committee, Southern California; Chairman, Relations Committee, Southern California; Chairman, Ways and Means Committee, Southern California

National positions: Chairman, Program Committee; Secretary

Other positions: Member, American Association of University Professors

Suzanne Hirt, Technical Director, School of Physical Therapy, and Associate Professor of Applied Anatomy, Medical College of Virginia

Association member since 1943

Chapter positions: President, Virginia; Director, Virginia

National positions: Member, Committee on the Study of Foreign-Trained Physical Therapists

Daniel H. Strelnick, Chief, Physical Therapy Section, Veterans Administration Center, Wood, Wisconsin

Association member since 1946

Chapter positions: Chairman, Education Committee, West Central District, Ohio; Chairman, Program Committee, West Central District, Ohio; Chairman, West Central District, Ohio; Chairman, Publications Committee, Ohio; Co-chairman, Public Relations Committee, West Central District, Ohio

(For two years)

Mary E. Nesbitt, Supervisor of Physical Therapy, Department of Physical Medicine, Massachusetts General Hospital, Boston, Massachusetts

Association member since 1930

Chapter positions: Chairman, Membership Committee, Northern California; Chairman, Program Committee, Massachusetts

National positions: Member, Committee on Nominations; Chairman, Committee on Education; Speaker, House of Delegates; Vice-President; President

Miss Nesbitt has been nominated as Director to fill the unexpired term of Miss Sarah Rogers who has joined the National Office Staff as Educational Consultant.

NOMINATIONS COMMITTEE
(Three to be elected)

Photographs of the following candidates for the Nominations Committee will appear in the April issue of the *Physical Therapy Review*:

Margaret Moore
Erma Myers
Vida Jo Niebuhr
Thelma Pederson
Barbara Robertson
Barbara White

Association Members Contribute as Co-Authors

Miriam L. Rodenberger, Capt., USAF (MSpC), and Betty B. Gettys, 1st. Lt., USAF (MSpC) are co-authors with Andres E. Sola, USAF (MC) of an article, "Incidence of Hypersensitive Areas in Posterior Shoulder Muscles" which appeared in the December 1955 issue of the *American Journal of Physical Medicine.*

New Student Members

Boston University
Marion R. Magee

Bouvé-Boston School

Theresa Hilleboe	Joan Newitt

Cleveland Clinic
Jerome Patti

D. T. Watson School

Alicia A. A. de Vovilloz	Eva Goldenberg
M. Anne Barnard	Charles H. Hall Jr.
Barbara Bauer	Lois Hill
Charles Beck	Jan Johnson
Virginia Bertholf	John Kernic
George Blanton	Patricia Lindeman
Roberta B. Butler	Nancy L. Long
Sidney Cohen	Leonard Luchsinger
Matthew Coppola Jr.	Thomas Meglen
Leona J. Deliere	Peter Moran Jr.
Doris Dove	Catalina M. Nunez
Iris R. Estavillo	Bernard Palmer
Joan Faust	Theodore H. Polka
Alton Fleming	Battista J. Sirianni
Gwen Forsyth	Ann L. Skovira
Patricia A. Fresa	Clarence Sterne Jr.
Robert Fuller	Mildred Towcimak
Margaret Godbey	Marlene Tredennick

New York University
Elizabeth Geiger

University of Connecticut
Louis Lesser

University of Wisconsin
Jane Cole

Washington University
Judith Kramer

Student Section

Regional Student Editors

Region I—Editor Audrey Haugaard—Simmons College
University of Connecticut
Boston University
Bouve-Boston School
Simmons College
University of Pennsylvania
The D. T. Watson School

Region II—Editor Joan Erback—New York University
Columbia University
Albany Hospital (Russell Sage College)
New York University
University of Buffalo
Frank E. Bunts Educational Institute
Walter Reed Army Hospital (May-Sept.)

Region III—Editor Marcia Field—Med. College of Virginia
Medical College of Virginia
Charity Hospital of Louisiana
Duke University
Baylor University
Hermann Hospital
University of Texas
Medical Field Service School (Sept.-May)
Brooke Army Hospital (May-Sept.)

Region IV—Editor Carol Vacca—St. Louis University
Northwestern University
State University of Iowa
University of Kansas
Washington University
St. Louis University
University of Oklahoma

Region V—Chairman Gail E. Barrand—University of Wisconsin
University of Minnesota
Mayo Clinic
University of Michigan
University of Colorado
University of Wisconsin
San Juan, P. R.

Region VI—Editor Ronald E. Bell—Children's Hospital
Childrens Hospital
University of Southern California
University of California
College of Medical Evangelists
Stanford University
Letterman Army Hospital (May-Sept.)

Student Editor—Audrey Haugaard

I wish to welcome to the student section the new chairman, Audrey Haugaard of Simmons, also regional editor in her locality. I also take this opportunity to thank all who have helped to make this student section a success, especially you regional editors. A special word of appreciation for the interest and suggestions of the editors of the *Review* with a most sincere thank you to Beatrice Whitcomb, our sponsor.

Yours for a better *Review*,

BEVERLY A. KINDIG

Columbia University

The fall registration of the Columbia University physical therapy program reports 53 students enrolled, representing 13 states and the District of Columbia. Not only have the class members come from across the nation, but from the Netherlands, Israel, and Venezuela. Once again the men are in the minority; all six males are in the one year program.

Through letters and personal meetings the Senior Class made sure all new students were contacted before they arrived for the fall term. This 'Big Chum' program not only served as an introduction to life as a physical therapy student in New York and as a source for answers to questions, but created a more friendly atmosphere for the strangers to New York.

This year the seniors initiated an additional welcome by giving an informal tea for all the students. The gathering proved very successful in getting the students acquainted.

The first project of the class as a whole was a Halloween Square Dance held at the Institute for the Crippled and Disabled. All recent alumni were contacted with a reunion as well as a dance in mind. Despite bad weather, it was an enjoyable evening. In addition to being a social success, the dance provided a sizeable profit which will be added to the scholarship fund.

This year the seniors are again participating in the development of two new aspects in the clinic affiliation program. In order that they may receive their degrees at the scheduled University time, they will fulfill their clinic hours between semesters and following final examinations. We

are pleased that our degrees will be received in June as it enables those who plan to remain in New York to take the State Licensing examination during the latter part of June.

Columbia has established an affiliation with the Visiting Nurse Service of New York City. This new affiliation has added to our clinical experience and given us a greater wealth of knowledge for the graduate world.

PATRICIA FOULKES
CAROL HOFFMAN

Albany Hospital Physical Therapy School

(Russell Sage College)

Albany Hospital Physical Therapy School began in 1945 with four certificate students coming from various parts of the country and several colleges. In 1951 the School became affiliated with Russell Sage College and graduated four certificate students and one Sage student. Since then there has been an increasing number of Sageites and certificate students and we now have six Sageites and four certificate students. Last year Sage students began to travel to and from Albany several times a week for the first time, and although their thoughts were of the "postman's motto," the experience gained was invaluable. This year, the Tenth Anniversary class is twenty-one in number—juniors, seniors, and certificate students—and classrooms are harder and harder to find!

Along with larger classes there have been other changes. Miss Dorothy L. McLaughlin became Physical Therapy Director of the School last year and Dr. Leonard D. Policoff, from the Medical College of Virginia, became Medical Director. Our basic science courses are now being taught by the faculty of the Albany Medical College. We spend many an hour in the dissection lab and have become very well acquainted with our cadavers. Penny Truebell (our skeleton in the closet) helps us even more in our Therapeutic Exercise and Tests and Measurements courses. Our first physical therapy pin was designed by the class of 1954 for the graduates of Albany Hospital Physical Therapy School and/or Russell Sage College. Due to the spreading of courses over the two years we now have preclinical training; this year we went to two hospitals in Schenectady as well as the Albany Hospital and the Albany Cerebral Palsy Center.

The elected officers of the year are: Connie Keating, president; Natalie Feitelson, secretary-treasurer; Pat Golden, senior Sage representative; Carolyn True, public relations; Ann Wolcott, junior Sage representative.

Our social activities include those at Sage, and a School Christmas party with all the trimmings was given just before the holiday vacation.

We have learned a great deal; we have encouraged and fascinated our "little sisters" from Sage with the profession of physical therapy; we have laughed with our patients and at our own first awkwardness; we have become more efficient, neat, enthusiastic, and proud.

We are looking forward to our professional courses next semester after the holidays in preparation for clinical affiliation and finally becoming qualified physical therapists.

CAROLYN TRUE

Frank E. Bunts Educational Institute

On the 19th of September, sixteen students enrolled in the Course of Physical Therapy of the Frank E. Bunts Institute. The students are from eight different colleges and three states, plus one from Haiti.

We are planning many activities for the coming months—carol singing for the hospital patients, competitive basketball games for the girls, ice skating, and social gatherings.

The Frank E. Bunts Educational Institute is affiliated with Bowling Green State University, Kent State University, Notre Dame College, Ohio University, and Rockford College. This is part of a "three and one plan" whereby the student receives a Bachelor of Science degree from the affiliating institution and a certificate from the Bunts Institute following completion of fourteen months in the Physical Therapy Course.

The school year is divided into fourteen months of didactic work and clinical observation and twenty weeks of clinical practice. We are looking forward to our clinical practice which will be divided into four-week periods with a choice of any five of the following: Cleveland Clinic, St. Luke's Hospital, Lakeside Hospital, City Hospital, Crile Veterans Hospital, Rainbow Hospital, Rosemary Home, V.A. Regional Offices, Society for Crippled Children, and the Cleveland Rehabilitation Center.

The Course in Physical Therapy is under the direction of the Educational Director of the Institute, Dr. Charles L. Leedham, the Medical Director, Dr. Paul Nelson, and the Physical Therapy Director, Miss Dorothy Spark. The teaching staff consists of many prominent medical and research doctors associated with the Cleveland Clinic among whom are Drs. Daniel Quiring

and Otto Glasser. Physical Therapists, Miss Dorothy Menefee and Miss Laura Gleason are instructors.

We are enjoying the Course in Physical Therapy and know that our future will prove to be a challenging one.

DOROTHY SPOONER

New York University

East side, west side, all around the town—New York University physical therapy students have classes at the School of Education, Institute of Physical Medicine and Rehabilitation, St. Vincent's Hospital, and N.Y.U.'s new College of Medicine. This year's professional class is composed of seniors from the four-year program at N.Y.U. studying for a B.S. and certificate in physical therapy; graduate students working toward their M.A. in physical therapy and certificate; and transfer students from colleges and universities throughout the United States and Canada. In addition to classes Monday through Saturday, professional students are completing their second of six clinical observation and practice affiliations included in the physical therapy curriculum.

On the lighter side of life at N.Y.U., this year's Physical Therapy Club is bustling with activity, led by Norman Hammer, '57, president; Ruth Samsel, '57, vice president; Mrs. Charlene 'Bunny' Schertzer Darnell, '57, secretary; and Joan Erback, '56, treasurer. Junior-Senior Board representatives are Arthur Ricklin, '56, and Alice Liebowitz, '57. Joan Erback and Sheila Bucholtz, '59 are the club's historians.

Professional students turned out in full force for the First Autumnal Barbecue, a fund-raising picnic of the Greater New-York Chapter of the APTA to support the Second Congress of the World Confederation to be held in New York City this June. On a crisp October Sunday in Alley Pond Park, Queens, touch football, flying game and other contests, and harmonizing to Elaine Daniels' guitar accompaniment, preceded a gastronomical orgy highlighted by mounds of snowy onions, huge hamburgers, foaming flagons of beer, scintillating sips of soda, and mugs of molten chocolate. Students, physical therapists, and spouses joined in a hotly contested softball game, featuring the pitching prowess of Irene 'Tiny' Resignola, '56.

In December, many of the clubs in the School of Education presented a carnival for the benefit of the Bundles for Bellevue Hospital charity drive. Sparking the event was the Physical Therapy Club's roulette wheel, presided over by student hawkers, Bunny and Richard Darnell, '56. Just before the Christmas vacation, the club held a painting party; embryonic Rembrandts joined brushes to give the club lounge a brand new appearance. After the holidays, ice skating, bowling, and theater parties are in the offing.

Professional students voluntarily participated in a series of two lectures at Goldwater Memorial Respiratory Center, Welfare Island and have been exercising student membership privileges in the APTA by attending district meetings.

Guest lecturers from the National League of Nursing, the Army Medical Specialist Corps, Ille Manufacturing Company, and St. Vincent's Hospital add to the students' breadth of experience.

Recruiting new students into the profession is a frequent topic during conferences with professional students held by Miss Elizabeth C. Addoms, curriculum director. The following suggestions have been voiced at these meetings: (a) the personal approach of student physical therapists and graduates is a valuable supplement to guidance literature; (b) Career-Day talks at high schools during the Christmas and Easter vacations advise undecided seniors and juniors of the opportunities in physical therapy; (c) club activities in the university keep underclassmen enthusiastic about physical therapy until they are ready to enter the professional course; and (d) underclassmen who volunteer at New York University's Institute of Physical Medicine and Rehabilitation gain additional insight into the field.

JOAN R. ERBACK

University of Buffalo

The students at the University of Buffalo recently met at several informal sessions for the purpose of forming a physical therapy club. A volunteer committee spent much time in drawing up a statement of aims and purposes for the club, based on suggestions made by each student present on what he felt was to be desired. The statement which appears below was approved by Miss Mildred F. Heap, Physical Therapy Director of the program, and was unanimously adopted by the students.

The aims and purposes of this club are:

1. To promote a professional attitude among the students,
2. To promote a sense of unity, fellowship, and mutual assistance,

3. To encourage interest in the profession of physical therapy,
4. To foster a high standard of scholarship and conduct,
5. To establish intercollegiate rapport,
6. To inform our faculty and alumni of our progress and activities.

At present, we are working to establish and develop the club, and it is encouraging that several alumni have pledged their support in this task.

By the time this article appears the senior and certificate students will be well into their clinical affiliations, something all are eagerly anticipating. We are finishing reports on visits made to physical therapy departments in local hospitals and, in addition, each of us is preparing a report on a model department which will include floor plans and cost of equipment. Our classes have progressed beyond the stage of isolated facts and now deal with modalities and treatment methods as clinical entities which is proving quite stimulating.

Looking back on the class as it was in September and comparing it with the class today, we note a remarkable change in attitude. We no longer discuss football or last night's TV show in the locker room, but instead the conversation centers around physical therapy and clinical conditions. Even more remarkable, we have progressed from thinking and functioning as individuals to functioning as a group—at last we are working as a team because we realize the importance of such action.

LLOYD M. RESNICOFF

Observations From An Awestruck Grad

In the Pacific Southwest there are many ranches, but only one "Rancho"—Rancho Los Amigos.

While a student at Mayo Clinic I saw a movie on glossopharyngeal breathing. At that time I noted it was filmed at Rancho Los Amigos Respiratory Center for Poliomyelitis, but that was the extent of my awareness. Then one day I received a jolt—I would soon complete my clinical practice at Mayo and I had no position in sight. I scanned the ads in the *Review* and saw one from this Rancho place—so I inquired, and thus it came about I increased by one the Rancho physical therapy staff.

The Respiratory Center of Rancho isn't a place, it isn't a position, it isn't an institution—it is an organization unparalleled. From the first hour I entered the physical therapy office I have been amazed that in contrast to one small office, one fledgling chief, one physical therapy instructor, and one part-time paraplegic secretary, such systemization could be produced. As an outsider I was flabbergasted, and now as an insider scrutinizing it even more closely I am none the less astounded.

Wondering how sixteen physical therapists with a chief therapist and one physical therapy instructor could cover seven separate sections, treating a total of approximately 275 inpatients daily and most of these twice a day, I snooped into the skeletal setup of Rancho and discovered what I believe to be the answer: decentralization. One chief physical therapist would need a powered bicycle to cover the whole territory served by the physical therapy department. The sections are spread geographically in an east-west length, with north and south wings pushing out at every point. In addition to approximately 150 polio inpatients, there are 40 multiple sclerosis, 55 general medical, and 19 general rehabilitation patients who are also receiving physical therapy.

The chief physical therapist may be a stamina queen but she claims no miraculous powers. She insists she could not shoulder the load alone without the support carried by the structure as a whole. Supervisory responsibilities are delegated to senior physical therapists, who are responsible for the care of approximately 40 patients in each section. All staff physical therapists and all attendants in each section are responsible directly to the senior physical therapist and indirectly to the chief. (Not that any one staff member cannot approach the chief directly—the P.T. office door is always open. There may not be anyone there, but the door is always open!) The attendants look to the staff and senior physical therapists for instructions and directions. Coordination of all activities is brought about by a weekly meeting of senior physical therapists, physical therapy instructor and chief physical therapist. In addition the instructor plays an invaluable role in welding the sections together with a weekly inservice training program for the staff.

Even with decentralization, the department still could not be covered by sixteen physical therapists. As the chief says, "We spread thin," but no sixteen persons could spread that thin; so the twenty-five attendants fill in the spaces

and gaps. They have weekly training periods with Rancho's physical therapy instructor, which are continued on the wards by the senior physical therapists. The attendants do the more routine jobs, such as range of motion, sling work, preparation for hydro and pool therapy, and routine gym work, thus freeing the staff physical therapists for the more technical procedures. These attendants are wonderful people and would work off their arms right up to the elbows if someone in the least way hinted that they should.

The cooperative relationship between physical therapy, occupational therapy and nursing is another point I could dwell upon. These groups work together on the wards as one single unit, dovetailing activities with concentration upon all doing for the patients the most that can be done, in the best way, with the ultimate aim — complete rehabilitation. The nurses attend in-service training lectures provided by the physical therapy instructor, and the physical therapists attend lectures provided by the nursing instructors, that each may know the reasons behind technical procedures.

Another factor contributing to the success of Rancho is the inservice clinical conference program. Eight conferences and clinics meet for an hour each week to plan the patient's rehabilitation program, to review his progress, to consider vocational possibilities, to plan surgical procedures, and to prepare for discharge plans for home care.

Approximately 450 patients have help through the outpatient department at Rancho. Some come to the center for treatment and others are seen by physical therapists in the patients' homes. Six conferences are held in this department for scoliosis, orthopedic, respiratory and postoperative problems, as well as orthopedic staff conferences and plaster clinics. A senior and a staff physical therapist are responsible for this department and have the part-time assistance of a secretary and an attendant.

Rancho has two orthopedic surgeons and two orthopedic residents; the residents spend six months here as part of the residency training program of the Los Angeles County Hospital. On call is a large attending and consulting orthopedic staff, as well as neurologists, chest specialists and ENT specialists.

Respiratory problems and involvements are first and top concern. A physiatrist, a specialist in his field, heads the respiratory department. He is aided by two registered nurses, a vocational nurse, and a physical therapist who takes over special problems in glossopharyngeal breathing. Fluoroscopy is used to detect diaphragm action. Vital capacities are watched closely and breathing patterns are checked daily. The most important part of any treatment (when the patient has respiratory involvement) is diaphragm re-education and strengthening, chest stretching, and establishing breathing patterns.

The polio patient with bulbar involvement is receiving special emphasis and Rancho physical therapists are exploring and developing technics driven by necessity and a desire to aid those who are severely involved.

Rancho physical therapists make use of all technics and ideas available. They do the muscle testing, help evaluate the new patients as they arrive, formulate treatment programs for approval, and make suggestions concerning splints and braces, activities and therapeutic exercises. Instead of merely carrying out orders, they are free to try new ideas, subject to the approval of the orthopedic, medical, and respiratory staffs.

Future plans

Rancho physical therapy department has plans. It hopes to make films on glossopharyngeal breathing, care of the bulbar patient, training movies in gait and functional activities, and studies in breathing patterns. Proposed to begin within the year is a one month workshop program for doctors, nurses, occupational and physical therapists which will include a week of concentrated lectures on neuromuscular involvement and three weeks of practical clinical experience. Also proposed is a six months' on-the-job training program for graduate therapists throughout the nation, with emphasis primarily on poliomyelitis care and rehabilitation. At present the physical therapy department has an authorized undergraduate student training program of one month clinical practice.

At Rancho Los Amigos there is an enthusiasm which is contagious. Cooperation is at a peak, where it must remain for such a tremendous job to be accomplished. Decentralization and cooperation—the alpha and omega of Rancho! I'm proud to be a bit of machinery in an unusual factory, a factory of aims and ideas, where daily production is directed toward the rehabilitation of those less fortunate than ourselves.

Beverly A. Kindig

Our thanks to Beverly Kindig for the fine work she has done during the past year as Chairman of the Student Section of the Review. We wish her success and happiness in her first assignment as a graduate physical therapist.

Physical Therapy Programs—1956

APPROVED BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION

Schools offering the four year program leading to a baccalaureate degree will accept high school graduates, *as well as transfer students.* Schools offering the 12 to 16 months program leading to a certificate will accept students who have completed all or most of their undergraduate work providing they meet certain course requirements. Recipients of a degree or certificate have equal professional recognition and status. For specific information regarding each school's entrance requirements, tuition, and other fees, please write to the director indicated below. All students should investigate course requirements *early.*

	Degree	*Certificate*
CALIFORNIA		
Mrs. Mary J. Dodge School of Physical Therapy Childrens Hospital Society 4614 Sunset Boulevard Los Angeles 27		†
Mr. R. William Berdan School of Physical Therapy College of Medical Evangelists 312 N. Boyle Avenue Los Angeles 33	†	†
Mrs. Margery L. Wagner Curriculum in Physical Therapy University of California The Medical Center San Francisco 22	†	†
Miss Charlotte W. Anderson Department of Physical Therapy University of Southern California University Park Los Angeles 7	†	†
Miss Lucille Daniels Division of Physical Therapy Stanford University Stanford	†	†
COLORADO		
Miss Dorothy Hoag Curriculum in Physical Therapy University of Colorado Medical School Denver 20	†	†
CONNECTICUT		
Miss Frances Tappan School of Physical Therapy U 101 University of Connecticut Storrs	†	
ILLINOIS		
Miss Elizabeth C. Wood Course in Physical Therapy Northwestern University Medical School 303 East Chicago Avenue Chicago 11	†	†
IOWA		
Mrs. Olive C. Farr School of Physical Therapy State University of Iowa University Hospitals Iowa City		†
KANSAS		
Mrs. Ruth G. Monteith Section of Physical Therapy University of Kansas Medical Center Kansas City 3	†	†
LOUISIANA		
Miss Marjorie F. Martin School of Physical Therapy Charity Hospital of Louisiana 1532 Tulane Avenue New Orleans 12		†
MASSACHUSETTS		
Miss Shirley M. Cogland *School of Physical Therapy Simmons College-Children's Hospital 300 Longwood Avenue Boston 15	†	†
Miss Adelaide L. McGarrett Curriculum in Physical Therapy Sargent College, Boston University 6 Everett Street Cambridge 38	†	†
Miss Constance K. Greene Curriculum in Physical Therapy *Bouve-Boston School, Tufts College Medford 55	†	
MICHIGAN		
Miss Virginia Wilson Curriculum in Physical Therapy University of Michigan University Hospital Ann Arbor	†	†
MINNESOTA		
Mrs. Ruby M. Overmann Course in Physical Therapy University of Minnesota 860 Mayo Memorial Hospital Minneapolis 14	†	
Mr. Darrell D. Hunt School of Physical Therapy Mayo Clinic Rochester		†

* Accepts women students only

	Degree	Certificate
MISSOURI		
Sr. M. Imelda, S.S.M. Course in Physical Therapy St. Louis University 1325 South Grand Boulevard St. Louis 4	†	
Miss Beatrice F. Schulz Department of Physical Therapy University of Washington, School of Medicine St. Louis 10	†	
NEW YORK		
Miss Dorothy L. McLaughlin *School of Physical Therapy Albany Hospital-Russell Sage College New Scotland Avenue Albany 1	†	†
Miss Mary E. Callahan Courses for Physical Therapists Columbia University College of Physicians & Surgeons 630 West 168th Street New York 32	†	†
Miss Elizabeth C. Addoms Physical Therapy Curriculum School of Education, New York University Washington Square East New York 3	†	†
Miss Mildred F. Heap Program in Physical Therapy University of Buffalo 2183 Main Street Buffalo 14	†	†
NORTH CAROLINA		
Miss Helen Kaiser Division of Physical Therapy Box 3403, Duke Hospital Durham		†
OHIO		
Miss Dorothy Spark Course in Physical Therapy Frank E. Bunts Educational Institute 2020 East 93rd Street Cleveland 6		†
OKLAHOMA		
Miss Thelma Pedersen School of Physical Therapy University of Oklahoma, Medical Center Oklahoma City 4	†	†
PENNSYLVANIA		
Miss Kathryn Kelley Curriculum in Physical Therapy D. T. Watson School of Physiatrics Leetsdale		†
Miss Dorothy E. Baethke Division of Physical Therapy University of Pennsylvania 1818 Lombard Street Philadelphia 46	†	†
PUERTO RICO (All classes given in Spanish)		
Mrs. Lutgarda Vega de Cruz School of Physical & Occupational Therapy Professional Bldg., 8th floor Stop 22, Santurce		†
TEXAS		
Miss Doris E. Porter Grady Vaughn School of Physical Therapy Baylor University Hospital Dallas 1		†
Miss Ruby Decker Curriculum for Physical Therapists University of Texas, Medical Branch Galveston	†	†
Mrs. Cecelia J. Lee School of Physical Therapy Hermann Hospital Houston 25		†
VIRGINIA		
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Miss Margaret Kohli Course in Physical Therapy University of Wisconsin Madison 6	†	†
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*Accepts women students only.

Please direct all inquiries regarding tuition, entrance requirements and other specific information to the school and *not* to the American Physical Therapy Association.

Abstracts

Treatment of Head Injuries

Walter E. Boehm, J. TENNESSEE M. A., 48: 357-361, October 1955

The immediate and follow-up treatment of compression injuries of the head is discussed in this paper. Injuries resulting from automobile accidents are the most common source of this type of head lesion in civilian life. Severity of cranial fractures and brain damage will vary with different persons as well as with the strength and acceleration of the blow to the head.

When faced wth a patient suffering from a head injury, there are certain steps that should be initiated in the emergency treatment. One should determine first the state of consciousness: is the patient awake and oriented, comatose, confused or stuporous? Close inspection of the cranium for contusions, ecchymoses and lacerations is indicated. If respiration is seriously affected an immediate tracheotomy should be performed. Shock should be combated. Next, the patient should be examined for abnormal neurological signs. Drugs to control restlessness and overactivity are in order. If the patient is in good condition, he should be treated for other lesser injuries to the body if present.

After attending to the patient during the early stages, follow-up treatment will vary according to the severity of the injury. In the more serious brain contusion and laceration cases blood pressure, pulse, respiration, temperature and fluid balance should be checked frequently. Most patients will recover with conservative treatment but some will require surgery. If, after a period of observation the patient does not improve, an acute intracranial hematoma may be suspected and craniotomy is indicated to control bleeding and remove the clot. If there has been a compound fracture or a depression fracture, the bone fragments must be elevated. When the fragments have penetrated the dura, débridement of the wound, administration of penicillin and approximation of the dura is necessary. Extensive tears of the dura may require a graft, and gross bone loss will necessitate a tantalum plate at a later date. In cases of subdural hygroma, the fluid trapped in the subdural space must be removed.

Importance of Diagnostic Methods in Physical Medcine

William H. Schmidt, J.A.M.A., 159: 1175-1177, Nov. 19, 1955

Although diagnosis was one of the earliest activities of physicians in the field of physical medicine, its importance is not yet fully recognized. Since 1732 when electric currents were first used to induce muscular contractions, there have been tremendous advances in the diagnostic and therapeutic uses of electricity. Electrodiagnosis can be utilized to determine accurately the condition of a nerve supplying a muscle and, therefore, can be used as a tool to plan treatment and determine prognosis.

The oldest, and a purely qualitative test, is the test for reaction of degeneration. This merely tells whether a lesion is present in a peripheral nerve, but not the extent of the lesion. If a muscle does not contract when stimulated with a faradic current, or if in response to a galvanic current the negative closing contraction is not greater than the positive, then a reaction of degeneration is present, and the lesion is in the peripheral nerve.

Later, a quantitative test was developed by Lapicque based on chronaxie determination, the time required for the excitation of a nerve or muscle by a definite stimulus. A normal muscle will respond in 0.00067 sec. whereas a degenerating nerve may require up to 0.1 sec. It is possible in this way to determine the amount of degeneration present and to check any increase or decrease in the degenerative process. Increased chronaxie occurs with lower motor neuron pathology, and not if there has been a lesion above this level.

Other diagnostic tests include the strength duration curve which is obtained by plotting the current required to produce the same degree of contraction as was observed in the determination of the rheobase against a series of decreasing stimulus durations. A normal muscle shows a continuous flat slope whereas degenerating muscle shows a discontinuous steep slope. Denervated muscle exibits a continuous steep slope that on regeneration becomes discontinuous again. This test may be of considerable value as a prognostic tool. In addition, a galvanic tetanus ratio test, and strength interval curve may be of significance in determining whether a muscle is in a stage of degeneration or regeneration. Both of these tests are discussed in the paper.

The perfection of the electromyograph and the establishment of fibrillation as an objective clinical finding, have been helpful in the diagnosis of neuromuscular diseases. Denervation fibrillation voltages are significant in the identification of peripheral nerve injuries and they disappear when the nerve regenerates.

With the variety of procedures available, the physiatrist may be of assistance in the diagnosis of hysterical paralysis, early cord tumors, malingering complaints, localization of disc lesions, muscular dystrophies and many other neuromuscular disorders.

Test to Distinguish Functional from Organic Limitation of Movement in Spine or Hip

Ian Aird, BRIT. J. MED., (No. 4948), 1110-1111, Nov. 5, 1955

This short, well-illustrated article suggests two simple, readily performed tests which may be used to differentiate limiting disorders of the back, which are physical, from those due to functional causes.

When limitation of voluntary movement in the spine or hip is the only physical sign presented and when all radiological examinations are negative, it is still difficult to ascribe the cause to hysteria or malingering entirely.

In the spinal-flexion test the movements of the spine are examined first in the prone and then in the supine position. The patient is then invited to assume a long sitting position while a show is made of palpating the spine from behind. He is next asked to stretch out his arms as far as he can. A rapid sketch is made of him in this position. He is shown the drawing which, as he examines it, is rotated through a right-angle turn and the patient suddenly realizes that he has bent his spine fully. If If the patient is suspected of suffering solely from hysteria the advice of a psychiatrist should be sought prior to administering the test.

The hip flexion test is performed in essentially the same manner. The patient lies supine; hip and knee on the affected side are then flexed to the attainable limit. Again the patient is invited to sit up and to

stretch forward as far as possible. A sketch is made of him in this position and when shown to him is gradually rotated giving a pictorial demonstration of the ability to fully and freely flex the hip.

End-Result Observations Influencing Treatment of Fractures of the Shaft of the Tibia

Marshall Urist, J.A.M.A., 159: 1088-1093, Nov. 12, 1955

Fractures of the tibia and fibula heal slowly and present more complications than fractures of almost any other bone. Because the periosteum in the middle and lower thirds of the tibia has little capacity for proliferation of external callus, the bone must heal mostly by means of endosteal new bone formation. The most common complications of tibial fractures are sepsis, osteomyelitis, slow-healing and non-union.

The results of this study indicate that closed treatment of tibial fractures is usually better than open reduction. With the closed method there is a shorter period of hospitalization, lower costs of medical care, reduction in the risk of complications and more are easily reduced without requiring surgical measures. Three methods which may aid in closed reduction are skeletal traction, transfixation pins in plaster and external skeletal fixation. Disadvantages of closed reduction are the loss of joint mobility, disuse atrophy, causalgia, swelling and decubitus ulcers. These, however, are not preventable by open treatment.

Where comminuted fractures are present, some contact between bone ends is essential if union is to be expected within a year. Restoration of alignment is required and open reduction may be necessary. Open treatment of the tibia ordinarily consists of surgical exposure of the fracture site, manipulation of the bone ends and some kind of fixation to maintain the reduction. Possible means of fixation include transfixation screws, bone plates, application of wire to tie the bone ends together and intramedullary nailing.

Delayed healing and non-union appear to be primarily a result of (1) separation of bone surfaces; (2) exposed bone; (3) sepsis; (4) excessive internal fixation; and (5) insufficient immobilization. In such cases a bone graft may induce healing.

The Recovery of Functional Activity in the Shoulder and Arm Following Radical Mastectomy

Norman C. Delarue, CANAD. M.A.J., 73: 704-709, Nov. 1, 1955

Impairment of scapulohumeral movement and arm function has long been a serious complication of radical mastectomy. Primarily, this dysfunction arises from scar restriction at the shoulder, and obstructive lymphoedema in the arm.

Edema depends upon anatomical vagaries and the pathological scarring of inflammatory origin developing in response to injection or serosanguineous fluid accumulations. This may be controlled by elevation of the arm and by wearing an elastic support.

The restriction of shoulder motion is due to the same scarring and aggravated by the stasis edema in the shoulder joint which results from muscular inactivity.

A regime of exercise is begun on the fifth postoperative day, when skin flaps should be firmly adherent to the chest wall and axillary dome. Exercises for the elbow, wrist, fingers, and shoulder should be carried out. The author describes an exercise program.

Function of Certain Neck Muscles During the Respiratory Cycle

Beverly W. Armstrong and Durwood J. Smith, AM. J. PHYSIOL., 182: 599-600, September 1955

Three co-called accessory respiratory muscles, the sternothyroid, the cricothyroid and the sternohyoid were assessed for their function during respiration. The study was undertaken to ascertain if the phases of contraction and relaxation of these cervical muscles corresponded to the respiratory cycle.

Healthy adult dogs were anesthetized and the larynx exposed. The muscles under investigation, with nerve supply intact, were dissected loose. Heavy silk thread was inserted into the free end of the muscle and then to a tension strain gauge. Respiration was recorded by means of a pneumograph acting upon a pressure strain gauge.

It was found that the incoordinate contractions of the sternohyoid muscle were not intimately associated with the respiratory cycle. The cricothyroid contracts during phonation and respiration. Of the three muscles, the sternothyroid is the most closely associated with respiration. In the examination of the muscles of nine dogs there was a consistent relationship between the contraction of this muscle and inspiration.

It is hypothesized that the sternothyroid muscle might be transplanted into a paralyzed vocal cord in order to assist in inspiration. The cricothyroid, not affected by interruption of the recurrent laryngeal nerve, acts as a tensor and adductor of the cord. Further studies are being carried out to see if these two muscles can provide a functional larynx in cases of bilateral recurrent nerve paralysis.

Body Reflexes Acting on the Body.

Lewis J. Pollock, et al., ARCH. NEUROL. AND PSYCHIAT., 74:527-533, November 1955

This interesting neurological study was made by a group of doctors from Northwestern University Medical School, and the Veterans Administration Hospital, Hines, Illinois. It was aided by a grant from the Multiple Sclerosis Foundation of America.

Magnus described certain righting reflexes whose level of activity was situated in the midbrain. In the cases described in this study, the influence of the midbrain, labyrinths, and neck reflexes upon the lower segments of the cord have been eliminated by injury. It is the purpose of the paper to show that postural changes, both static and kinetic, may be produced in the absence of labyrinthine, neck, or midbrain reflexes.

It was found that the posture of the patients varied in respect to their position at rest. A posture of extension was seen when the subject was lying in a supine position, and when the patient was turned on the side, a flexion of the lower extremities was seen. To facilitate the movement, the patients were examined while partly submerged in a swimming pool, to diminish the retarding effect of friction and gravity.

It was found that these reflexes were more readily evoked from patients with lesions in the upper half of the thoracic segments of the spinal cord, less in those with cervical cord lesions, and, of course, slightly or not at all in the lowermost thoracic segments.

Painful Feet

Joseph C. Risser, POSTGRAD. MED., 18: 416-421, November 1955

In this paper the author discusses the pronated foot as one very common cause of painful feet. The anatomy of the foot is discussed, and it is pointed out that the function of the longitudinal arch is to house such essential structures as blood vessels, muscles, and nerves. Three main factors cause the pronated foot or forefoot abduction: (1) stretching of the plantar fascia, (2) contracture of the posterior structures, and (3) a discrepancy of leg length.

Stretching of the plantar fascia allows abduction of the forefoot. When that occurs, the weight thrust of the body downward will fall on the inner side of the foot where the soft tissues undergo the stress of weight-bearing. If the cord shortens, the foot cannot come down flat, and the tibia leans backward. When this occurs, either the heel rises early in the forward step or the plantar fascia gives, and the forefoot becomes abducted. A person with one leg longer than the other, will turn his foot out on the long-leg side as he walks. This lessens the functional length of his foot.

A method of making foot tracings is described. These are helpful in evaluating foot problems and in determining progress of treatment. Instructions for shoe correction for pronation or abduction of the forefoot are given with explanations of each. A lift is placed on the forward, inner corner of the heel. The shank of the shoe is made flexible. The inner length of the heel should be one-third the length of the foot and the outer length of the heel should be one-half inch less. The author believes that the foot has to be educated. You must make the foot flexible and increase its blood supply by local muscle action to keep the foot alive.

The New York City Consultation Service for Orthopedically Handicapped Children

Helen M. Wallace, James Nicholas and Robert S. Siffert, J. PEDIAT., 47: 614-618, November 1955

In 1952 the diagnostic and consultation service clinic for orthopedically handicapped children of the City of New York was transferred from a district health center to a teaching hospital. The new location offers several advantages: availability of essential diagnostic tools; closer relationship with a hospital for follow-up care and diagnosis; opportunity for experience with a wide variety of orthopedic conditions.

Statistics have been recorded for a 6-month period from July, 1954 to January, 1955. The clinic met for 3 hours weekly at a total cost to the department of health of $450.85. The staff included an orthopedist, a nurse and a clerk. This monetary outlay averaged a cost of $3.52 per child examined.

During the 6-month period, 131 children were examined showing a large variety of orthopedic conditions. Of this number, 71 per cent were referred for further orthopedic care and rehabilitation. This rather high percentage would amply justify the need for an orthopedic consultation service.

Of the 98 school children seen, 93 were recommended for placement in regular classes of the public school system. This is a larger figure than those issued by the Bureau for Handicapped Children of New York City. This would indicate that either the children were generally less severely handicapped in this public health clinic and/or a personal examination of the child is the only sound medical way of conducting a school placement program.

Another significant finding was that most of the children (86.2 per cent) were referred by the school health clinic. This reflects the fact that an earlier case finding of orthopedically handicapped children is needed.

Closure of Wounds and Incisions With Adhesive Tape

Theodore Gillman, Jack Penn, Doris Bronks and Marie Roux, LANCET, (No. 6897) 945-946, Nov. 5, 1955

Methods for sutureless closure of surgical incisions were investigated with the aim of avoiding some of the problems of incision closure with sutures. Five ambulant active volunteers were the subjects.

Two incisions, 2 to 3 inches long, through the skin of the forearm and down to the subcutaneous fat were made. One incision was closed with 5 or 6 size 0 black silk sutures in a no. 19 cutting needle. The other wound was closed with transparent adhesive plastic tape. The tape was cut in approximately ¼ by 3 inch strips. Each piece was applied carefully and with firm pressure to approximate the skin edges with almost a hairline closure. Large strips were applied across the ends of all the transverse strips, parallel to the incision. The wounds were then bandaged. After the fifth postoperative day, the wounds were examined and compared daily and some biopsies were taken.

The result of this study generally favored the adhesive tape method of skin closure. The healing of the taped wounds was in every way as good or better and there was less localized inflammation. Very little discharge was found beneath the tape and there was less skin irritation and itching. When tested on the tenth postoperative day, the tensile strength of both methods was equivalent. If the tape is left for a longer time, 15 days, one may expect a perfect hairline scar with no spread after removal of the tape.

From the results of this preliminary study, it is suggested that skin lesions be closed with plastic tape alone or to supplement a few widely spaced stay-sutures. This method is preferred because of better and quicker healing, less scarring, it is more simply and rapidly done, there is less discomfort to the patient, and less chance of infection spread.

The Use of Cortisone and Hydrocortisone in Allergy.

Walter S. Burrage, et al., ANN. INT. MED., 43:1001-1018, November 1955

The authors report of their experiences with the use of cortisone and hydrocortisone for patients with allergic and related disorders.

Patients with asthma who develop acute paroxysms or have persistent wheezing may be wisely and successfully treated with corticosteroid therapy. After being hospitalized and if other drugs fail to relieve the severe symptoms, cortisone or hydrocortisone therapy is justified. Once the patient is symptom-free, an attempt should be made to classify his asthma. In a few chronic severe cases, it may be necessary to continue with maintenance dosages. These patients should be followed closely for unwanted side-effects. One patient's history is discussed in which long term cortisone therapy

alleviated his severe asthma, but led to other severe complications.

Patients with persistent atrophic dermatitis may be considered for treatment with cortisone. It is primarily indicated when the condition is resistent to other therapy and when the etiology is unknown. Topical applications of these steroids have the advantage of avoiding the side-effects of systemic treatment.

The collagen diseases of rheumatoid arthritis, polyarteritis nodosa, rheumatic fever, disseminated lupus erythematosus, generalized scleroderma and dermatomyositis are characterized by extensive damage to connective tissue. Either of the hormones may be successful in controlling symptoms of collagen diseases.

Patients with contact dermatitis, drug and serum reactions, and nasal allergy can usually be treated successfully with more conservative methods than with these hormones.

Cortisone and hydrocortisone are useful in selected cases of allergic and related disorders. But these steroids possess potentially dangerous side-effects. Therefore, they should be used discriminately and primarily for short periods.

Prostigmine-Responsiveness and the Diagnosis of Myasthenia Gravis.

Lewis P. Rowland, NEUROLOGY, 5: 612-623, September 1955

Prostigmine has proven to be of value in the diagnosis and treatment of myasthenia gravis. It is generally considered that if a patient does not respond favorably to prostigmine that the diagnosis of myasthenia gravis is incorrect. Several case histories are presented in this article which illustrate the diversified symptoms of the disease and which indicate that the prostigmine test is not 100 per cent reliable. Reactions among patients to the drug are variable. Responses to its therapeutic use may be evident immediately after the start of its administration, or in many cases there may be a long lag period, if indeed a favorable response ever does occur.

Another factor to be considered is that of psychoneurosis and its relation to myasthenia gravis. Some patients with psychoneurotic asthenia have shown good response to prostigmine therapy, but they have also improved after the administration of placebos. Similar results have been found in myasthenia gravis patients. The functional patients, however, do not usually have symptoms referable to the cranial nerves.

Polymyositis and myasthenia gravis have some similar clinical features. Patients with unequivocal myasthenia gravis may show histological lesions of skeletal muscle. Either syndrome may result from more than one etiology. There may well be an etiological relationship between myasthenia gravis and other conditions such as progressive muscular dystrophy, thymoma and thyrotoxicosis.

The usual characteristics of the syndrome of myasthenia gravis include: (1) symptoms referable to the cranial nerves, (2) remissions in the past history, (3) muscle weakness aggravated by fatigue and improved with rest.

The response to prostigmine is still to be considered an important diagnostic and therapeutic tool.

Isonicotinic Acid Hydrazide in Multiple Sclerosis

M. C. Korengold, G. R. Haase, L. R. Berg and K. R. Magee, NEUROLOGY, 5: 801-804, November 1955

At the National Institutes of Health, Bethesda, Maryland, a study was made to evaluate the therapeutic effects of isonicotinic acid hydrazide (INH) on multiple sclerosis. There were 32 patients in the series from 15 to 45 years of age, one-half of whom were female. All had definite diagnoses of multiple sclerosis with at least two episodes of the disease. The group contained both hospitalized and outpatients.

The group was paired according to age, course and severity of the disease. One member of each pair received INH and the other an identical appearing placebo. The pairing and knowledge of which patient received the drug and which the placebo was by a physician not in direct contact with the patients. All subjects received 6 tablets daily. Those receiving INH got a total daily dosage of 300 mg. The group received no other medication. Six patients in the INH group and 8 in the placebo group received physical therapy treatments.

The patients remained under observation for 3 months and were evaluated according to two methods. The functional Kurtzke-Berlin scale to evaluate neurological status in 10 categories was used as the first test. According to this scale, of the 16 patients in the INH group 11 showed no change, 3 were slightly improved and 2 were worse. Of the 16 patients receiving placebos there was no change in 14 while 2 were considered worse. When a second method of evaluation was used at the end of the three month period, 7 patients from the INH group and 3 from the placebo group were considered improved. Five patients in the INH group and 4 from the placebo group were worse.

It was concluded that while INH caused no toxic effects, it did not prevent acute exacerbations nor offer proven beneficial effects in cases of multiple sclerosis.

Diagnosis and Modern Treatment of Cerebral Vascular Disease.

Irving S. Wright, Ellen McDevitt and William T. Foley, ARCH. INT. MED., 96:552-559, October 1955

Cerebral vascular diseases are among the most serious and commonest of diseases, yet the present status of knowledge of these diseases, and the present results of treatment are far from satisfactory. The differential diagnosis of cerebral hemorrhage, thrombus or embolus is no longer of purely academic interest. Various methods to aid in diagnosis are discussed in this interesting article.

Cerebral hemorrhage is always serious. Surgical methods of treatment may be considered for subdural or extradural hemorrhage, but most other cerebral hemorrhages are not amenable to specific therapy at this time.

The use of sympathetic blocks foracute thromboses or emboli is under study at the present time and final evaluation of their efficacy remains for the future.

The use of anticoagulant drugs for the treatment of thrombosis and embolism is also in the process of investigation. Experience with the use of anticoagulants in the reduction of thromboembolic episodes in 57 patients is reported here.

The 57 patients, during a period of 795 patient-months before beginning anticoagulant therapy, experienced 205 thromboembolic episodes, 81 of which were cerebral in location. Following institution of anticoagulant therapy, during a period of 1,162 patient-months, these same

57 patients experienced 23 thromboembolic episodes, 6 of which were cerebral in location.

A reduction of incidence appeared to have occurred in emboli arising from thrombi in the hearts of patients suffering from rheumatic heart disease or from acute myocardial infarction. A reduction in the incidence of recurrent thrombosis in the arteries of the brain was also noted. In addition, there was also a reduction in the number of venous and arterial thromboses occurring elsewhere in the body.

The risk from hemorrhage in the treatment of these diseases with anticoagulants was present but not excessive.

Non-Operative Treatment, Including Manipulation, for Lumbar Intervertebral Disc Syndrome.

Merrill C. Mensor, J. BONE & JOINT SURG., 37-A:925-936, October 1955

Conservative or nonoperative treatment for herniated lumbar disc has been given increasing attention by orthopedic and neurosurgeons. The opinion now prevails that only a small percentage of cases require surgical attention. In general, the usual conservative treatment may be divided into 4 main components: (1) rest, (2) support, (3) rehabilitation exercises and (4) time. This paper reports on the addition of manipulation procedures to the therapeutic program. The use of manipulation treatment under anesthesia for lower lumbar intervertebral disc syndrome has resulted in a sufficiently high percentage of satisfactory results to warrant its use. The authors feel that treatment by manipulation should be given precedence over surgical intervention, except in those cases in which there is a definite contraindication for its use. Their opinions and results were arrived at following a 10-year study of 285 patients with diagnosed protruding lumbar intervertebral disc.

Nothing new or original was claimed for the treatment described but the importance of strict adherence to the details of the treatment were stressed. Satisfactory results, if obtainable, are to be expected after one, or at the most, two manipulations. Repeated manipulation was not felt to be justified. Successful treatment was predicted upon a prompt loss of sciatic pain. Failure to respond to an organized regimen of conservative treatment, including manipulation under anesthesia, warranted the recommendation for prompt surgical intervention, providing the incapacity was sufficiently pronounced.

A certain percentage of the cases in this series were not amenable to manipulation; but premanipulation differentiation is impossible in the light of present knowledge. Two hundred-five of the cases were analyzed; 72 were private cases and 133 were industrial cases. The percentage of satisfactory results in the private cases was 64; 11 per cent were fair and 25 per cent failures. The percentage of satisfactory results among the industrial patients was 45; 18 per cent were fair and 37 per cent failures. The apparent discrepancies in these end results between the two types of patients were explained by the monetary factor and the larger percentage of the industrial cases engaged in heavy labor.

The series revealed a higher percentage of cases exhibiting complete symptomatic relief following manipulation and its accompanying regimen than that following surgery, with a lesser amount of permanent disability in those cases in which residual disability persisted.

A complete discussion of clinical findings, both before and after treatment, is included as well as description of the manipulative methods.

Lumbar Traction Therapy — Elimination of Physical Factors That Prevent Lumbar Stretch.

Bernard D. Judovich, J.A.M.A, 159: 549-550, Oct. 8, 1955

Traction is a widely employed procedure in the treatment of low back and/or sciatic pain, particularly in the conservative treatment of herniated intervertebral disc. The method usually consists of applying weights to a pelvic belt or to the lower extremities, but this weight is completely neutralized because of the surface traction resistance of the lower body parts. In lumbar traction, surface traction resistance may be defined as the horizontal dragging force necessary to overcome the resistance produced by (1) the area of surface contact of the body, (2) the weight of the body and (3) the quality, contour and texture of the contacting surfaces.

In order to determine the surface traction resistance, 3 live subjects and 1 cadaver were studied. This investigation revealed that the average surface traction resistance of the body in a hospital bed is approximately 54 per cent of the total body weight. The lower body segment weighs approximately 49 per cent of the total body weight. It also requires approximately 54 per cent of the weight of the lower body segment to overcome its own surface traction resistance. This latter is equal to approximately 26 per cent of the total body weight. Only adequate weight in excess of this figure will have a stretch effect on the lumbar spine. The higher the segment in which stretch force is desired, the more weight that will be necessary.

Present methods of constant weight traction for the lumbar spine are inadequate and produce no stretch effect upon the lumbar spine or its adjacent tissues. This is due to the fact that insufficient pull is applied to overcome the surface traction resistance of the lower body segment. The concept, therefore, of using hanging weights to overcome lumbar muscle spasm is, in view of the findings presented in this paper, without foundation.

The author has designed and in the paper describes a bed which may be used to successfully eliminate the resistance of the lower body segment. Unlimited traction force can be obtained when using this apparatus.

No attempt was made to evaluate the effect of traction therapy upon the lumbar spine.

An Evaluation of Results in 71 Transorbital Lobotomy Cases Five Years Postoperative.

Charles W. Powell, WEST VIRGINIA M. J., 51:287-290, September 1955

The first operative procedure aimed at cerebral destruction was done in Switzerland in 1890; in 1935 Egas Moniz received the Nobel Prize for his work in prefrontal lobotomy.

Various technics have been used in cerebral destruction by surgery such as lobotomy or leucotomy, topectomy and thalamotomy. It is the aim of the neurosurgeon to sever the thalamofrontal radiation concerned with the conscious experience of emotion. In so doing the idea is to reduce the emotional component of the mental illness, but yet leave sufficient fibers of the frontal lobes intact so as to permit adequate social and work adjustment.

Previous reviews of cases have often reported good results with prefrontal lobotomies; others have questioned the results. In examining the results one should question very closely, what constitutes improvement? The patient needs to be observed from mental, social and behavioral aspects for long periods of time. It must be remembered that "a lobotomy only exchanges one defect for another and an even more permanent one."

In this study 71 patients, 83 per cent of whom were diagnosed as schizophrenic, received transorbital lobotomies. They were examined periodically for a period of more than 5 years postoperatively. These surgical patients were compared with a control group of 71 schizophrenic patients who were not treated surgically.

Of the patients treated surgically 22, or 32 per cent, finally obtained extramural status, that is, were able to leave the hospital. Thirty-seven or 52 per cent of the control group obtained this extramural status. It was also observed that patient improvement was inversely proportional to the extent of the surgery.

In conclusion, it was suggested that while this type of operation may yield favorable results in carefully selected cases, its indiscriminate use is in no way justified. Criteria of selection of patients for surgery should be based on chronicity and severity of the disease and only when other therapeutic measures have failed.

The Management of Stasis Ulcers: Comparison of Therapies

Harvey R. Butcher, GERIATRICS, 10: 516-519, November 1955

The treatment of stasis ulcers in Barnes Hospital from 1940 to 1951 was by one of two methods. The first included injection or ligation of varices and wearing of the Unna boot, elastic stockings, or bandages. The second method comprised injection or ligation of varices, wearing of elastic supports, and grafting of the ulcer without excision or after its excision with only a narrow band of surrounding skin.

The treatment program for 48 patients from 1951 to the present time consisted of new procedures: ligation, excision or stripping of varicose veins, immediate split grafting of the cutaneous defect after excision of the ulcer and all thickened skin and fascia about it, and wearing of elastic supports.

The second treatment described was found to be better than the first and the last, or new method, better than either of the preceding.

Stasis ulcers were found most often in older persons, however, success or failure of therapy was not related to age.

Dermatomyositis: Diagnostic Features and Therapeutic Pitfalls.

C. A. Domzalski and V. C. Morgan, AM. J. MED., 19:370-382, September 1955

Two cases of dermatomyositis, the rarest of the collagen diseases, are described in this paper. One patient had severe muscle atrophy, arthritis with contractures, dependent edema and pleuro-pulmonary involvement. Dermatitis remained absent. The second patient presented psoriasiform dermatitis which became exfoliative, generalized edema, and had evidence of cardiac involvement. Striking creatinuria was present in both patients and its diagnostic value was discussed.

Gastric ulcers with hematemesis developed in one patient and acute psychosis in the other, both complications which may have been due either to ACTH-cortisone therapy or to dermatomyositic involvement of the stomach and brain, respectively.

A review of the literature revealed that dermatomyositis has protean manifestations but can nonetheless be clinically differentiated from the other collagen diseases. To date, 51 instances of carcinoma and dermatomyositis occurring in the same patient have been reported. It was suggested that the incidence of carcinoma in these patients is more than coincidental and that search for an occult neoplasm is indicated in every patient with dermatomyositis.

Concerning the etiology of dermatomyositis, no single agent has been consistently found and there is reason to believe that the disease is a syndrome which has many causes. There is increasing support for the view that in patients with dermatomyositis sensitization to a variety of antigens such as the tubercle bacillus, streptococci or their products, may be the basic pathogenetic mechanism. This is in line with the current concept that the etiologic common denominator in the collagen diseases is the vascular "hypersensitivity" reaction.

The over-all mortality rate for dermatomyositis is 50 per cent. It is a more severe disease with a higher mortality during the first few decades of life when muscular development and activity are at a high level. Fulminating cases are rare. Spontaneous remissions may last as long as 8 years. The most common cause of death is aspiration pneumonia initiated by weakness of the muscles of deglutition and respiration.

A Long Term Survey of the Incidence of Renal Calculosis in Paraplegia.

A. Estin Comarr, J. UROLOGY, 74: 447-452, October 1955

Renal calculosis is a most serious threat to patients who have sustained injury to the spinal cord. The precipitating causes of this condition are infection, stasis, and hypercalciuria because of immobilization. The purpose of this study was to determine the incidence with which renal calculi are found in paraplegics and what effects various factors have upon this incidence.

Paraplegic patients from the Long Beach Veterans Hospital were chosen during a 9-year period. Of the 1,104 cases studied, 1,006 patients had spinal cord injuries and 98 had tumors or diseases of the spinal cord.

The over-all incidence of renal calculi was 6.8 per cent (75 cases) as compared with an incidence of 28 per cent bladder calculi among the 1,104 patients. Renal calculosis was more frequent in patients with lower motor neuron lesions. The ratio of incidence of upper motor neuron lesions to lower motor neuron lesions equalled 5.7 per cent to 9.0 per cent. The incidence was also greater among patients with complete neurological lesions than with incomplete lesions.

Laterality did not affect the results significantly; the left kidney had more demonstrable calculi than the right in patients with lower motor neuron lesions.

Of the 567 patients treated between World War II and 1950, 67 (12 per cent) had renal stones. Of 537 patients treated between 1950 and 1955, 8 (1 per cent) had kidney calculi, a sharp decline in incidence.

Seventy-two per cent of the renal stones found in this series had devel-

oped during the first 18 months after injury and only 28 per cent thereafter. Stones, however, may occur as late as 150 months post-injury. The rarity of late development points to the importance of early ambulation.

Only one true recurrence of renal stone was observed in this series, whereas 8 "pseudo" recurrences of the calculi were seen.

Preventive treatment consisted of early ambulation and an adequate daily intake of fluid.

Neuromuscular Transmission: Fundamental Aspects of the Normal Process.

William L. Nastuk, AM. J. MED., 19: 663-668, November 1955

The normal neuromuscular transmission process involves the following sequence of events: nerve action potential, acetylcholine release, combination of acetylcholine (ACh) with endplate membrane receptor, decrease in transmembrane potential at the endplate, muscle action potential, muscle contraction. In this article each of the steps is discussed simply and briefly.

At present the nature of the coupling between the membrane action potential and the activation of the contractile elements is unknown.

The muscle action potential may be initiated at a point along the length of a muscle fiber where the resting membrane potential is suddenly reduced to a critical value. If the critical value is not reached, the disturbance remains localized and the membrane potential returns to the resting level with no propagated action potential being elicited.

When a nerve action potential arrives at the muscle, it causes localized reduction of the membrane potential at the endplate called the endplate potential (EPP). D-tubocurarine applied to a nerve muscle preparation reduces the sensitivity of the endplate to ACh thus blocking neuromuscular transmission.

ACh is thought to react with the endplate membrane causing that structure to increase its permeability to ions. When ACh is applied to a nerve-muscle preparation electrophoretically the membrane potential at the site is progressively reduced until the critical level is reached and a propagated action potential is elicited.

Reduction of the membrane potential requires ionic redistribution. ACh facilitates a transmembranal movement of ions, the most likely source of inward moving ions would be Na^+ ions. This hypothesis was tested and the following conclusions drawn: (1) combination of ACh ions with endplate receptors is inhibited when the total ionic strength of the extracellular solution is reduced; (2) a prominent response of the endplate membrane when reacted with ACh ions is an increase in its permeability to Na^+ ions.

This article contains several excellent illustrations as well as a very good bibliography on recent research on neuromuscular transmission.

Abstractors for March

We are indebted to the following for assistance in preparing the abstracts for this issue:

Jean Cuthbertson
Barbara Earley
Judith Kurtz
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Book Reviews . . . . .

American Academy of Orthopaedic Surgeons; Instructional Course Lectures. Vol. XII. *Edited by R. Beverly Raney, M.D., Chapel Hill, N. C. Cloth; price $10.75. Pp. 287; illus. J. W. Edwards, Ann Arbor, Michigan, 1955.*

This is a compilation of some of the papers given in the instructional courses at the 1955 meeting of the American Academy of Orthopaedic Surgeons. It is edited by Dr. R. Beverly Raney.

The first chapter is "Medical Writing" by William A. Rogers who is the editor of the *Journal of Bone and Joint Surgery*. This is an excellent paper—very helpful to anyone who wishes to write on a scientific subject. It is clear, concise and very much to the point. It deals with the methods of presenting statistics and makes suggestions for writing various types of papers.

The second chapter deals with traumatic lesions. There is a paper on internal derangements of the knee by Dr. G. T. DuToit of South Africa. He discusses the anatomy and physiology of the knee, the mechanism of injury, the diagnosis of menisci injuries and the treatment. In this he includes not only surgical removal but also the after-treatment in which he emphasizes rehabilitation exercises. There is a paper on intracapsular fractures of the neck of the femur by Dr. J. W. Fielding describing the technic for pinning the hip and advocating metallic hip prostheses for those cases in which there is a failure of union. There is an article on early management of wounds of the extremities from surgeons at the Walter Reed Army Medical Center. This is an excellent paper which concludes with a list of fundamental principles for the treatment. An article on acute arterial injuries by Dr. Carl W. Hughes describes the technic of vascular repair by suture as well as by vein grafts. He stresses the importance of early repair.

In Chapter III congenital anomalies are considered. There is a complete description of congenital dislocations of the hip after the age of infancy by Dr. H. R. McCarroll. He has excellent illustrations showing his before and after treatment. He describes his technic for supracondylar osteotomy to correct the femoral torsion. He shows excellent results with this relatively simple procedure. There are two articles on congenital club feet. Dr. George Garceau emphasizes early treatment and continuous treatment until the entire deformity is corrected. Dr. J. H. Kite describes the operative treatment of the congenital club foot. This is a concise, masterful treatise on the subject.

Chapter IV is on plastic surgery of the extremities. There is a long article by Drs. Frackleton and Dockter in which they describe and illustrate methods of skin grafts as they are applied for different parts of the body. They particularly emphasize plastic surgery for injuries of the hand.

Chapter V is Physiology and Biochemistry with an article on "Surgical Applications of Muscle Physiology" by Dr. C. O. Bechton. Dr. Smith Freeman, in a brief résumé of calcium and phosphate metabolism includes everything that is known about this subject.

Many subjects are included in the remaining chapters. Dr. Steindler discusses the mechanics of sacrolumbar junction and of the paralytic gait. These are both written in his thorough, scientific manner. The subject of amputations is covered by Dr. C. O. Bechton and Dr. D. B. Slocum. Arthrodesis of the hip is the subject of an article by Dr. Guy Caldwell. Dr. G. W. Eggers has an article on "Selective Surgery for the Cerebral Palsy Patient." "Cartilaginous Tumors of the Bones" are described by

Dr. Mary Sherman. There is an article on "Contrast Myelography" by Dr. John Camp. Dr. J. C. Risser writes on scoliosis. An important paper on "Prevention and Treatment of Cardiac Arrest" is presented by Dr. Edward B. Tuohy. Dr. Louis J. Regan deals with medicolegal testimony. A chapter is given to disability evaluation in which Dr. Earl D. McBride suggests a formula for evaluating disability.

The Management of Acute Poliomyelitis. *By C. P. Stott, S.R.N., C.M.B., Diploma of Poliomyelitis Nursing (U.S.A.); and H. Fischer-Williams, M.R.C.P. Ed. Senior Neurological Registrar, Birmingham United Hospital; formerly Neurological Registrar, Oxford United Hospital. Cloth; price $3.00. Pp. 99; illus. Williams & Wilkins Co., Baltimore, Md., 1955.*

This book is small but well written; clear, with not a wasted word. It is written primarily as a guide for nurses in the total care of the poliomyelitis patient. However, for anyone interested in poliomyelitis this would be reading time well spent for the book reads easily, and certainly reciprocal understanding and help is furthered. All the information is to the point, and up to date. That the authors' backgrounds qualify them to write such a book is evident from the intelligent presentation of the material. Their experience includes work in both England and North America.

The importance of seeing the total situation through the eyes of the patient, the relatives, and medical personnel is not a mere statement of words but is substantiated by factual knowledge beginning with a concise discussion of the nature of the disease and its ramifications. From this first chapter each subsequent chapter reviews the clinical picture of each type of poliomyelitis, the anatomical and the physiological aspects, the various stages of treatment, and thus the responsibilities of the nurse. In all suggested procedures both the advantages and disadvantages are discussed. The types and care of equipment necessary during each phase of treatment are included. Of particular interest to the physical therapist are the description and the charts for range of motion exercises. Since the nurse is with the patient far more than the physical therapist, all that the nurse does with proper positioning and range of motion is invaluable to the patient's subsequent recovery and to the physical therapist. This section would be particularly helpful to the physical therapist in instruction of the polio nurse. The illustrations here are excellent; the remainder of the pictures dispersed through the book are also well selected. The last appendix climaxes the theme of seeing the total situation through the eyes of the patient—with a patient's personal account of time spent in the "old box."

In any monograph it is not practical to include all the "gems" of experience and scientific knowledge, but here is a decidedly helpful handbook for anyone working with the poliomyelitis patient regardless of capacity or stage of treatment. Through this book and Dr. Spencer's manual, *Treatment of Acute Poliomyelitis*, the physical therapist has available excellent guides for contributing to the intelligent care of the poliomyelitis patient, and also to a better appreciation of the responsibilities of others concerned with the patient.

An Introduction to Human Anatomy.

By Clyde Marshall, M.D., formerly Assistant Professor of Anatomy, Yale University School of Medicine. Revised by Edgar L. Lazier, Ph.D., Professor of Zoology, University of California at Los Angeles. Fourth Edition. Cloth; price $4.50. Pp. 420; illus. W. B. Saunders Co., Philadelphia, 1955.

The arrangement of this anatomy text is unusually good. Discussion of tissue precedes the structures in which that specific tissue is involved. These explanations are well done and should give the student an easier understanding of the organ or structure discussion which follows.

Most extensive change in this fourth edition is in the neurosensory system. The neuron and supporting elements in nerve tissue are described and then the main structural features of the nervous system follow. Main pathways are described to orient the student, leaving discussion of other pathways to the discretion of the instructor. Some changes have been made in the function of the endocrine glands.

The majority of illustrations have been taken from other sources. An interesting addition is that of showing the figure numbers at the top and bottom of the illustrations. This text was edited mainly for pre-nursing, physical education, and liberal arts students.

Hearing Therapy for Children. *By Alice Streng, M.A., Director, Exceptional Division, Wisconsin State College, Milwaukee; Waring J. Fitch, M.A., Hearing and Vision Consultant, Washington State Dept. of Health; LeRoy D. Hedgecock, Ph.D., Consulting Audiologist, Mayo Clinic; James W. Phillips, M.D., Otolaryngologist in Private Practice, and Consultant, Washington State Department of Health, and Lecturer, University of Washington; and James A. Carrell, Ph.D., Director, Speech and Hearing Clinic, University of Washington. Cloth; price $6.75. Pp. 371; illus. Grune & Stratton, New York & London, 1955.*

The five persons responsible for putting this textbook together state that they planned it for use by professional persons who work with hearing-handicapped children. The intensity of the presentation suggests that the authors are actively worried that these children as a group are still gravely neglected, in spite of a service program that has done considerable growing in the recent past.

The book provides for those who work in the great area of hearing problems a reminder of the various facets of this acutely important field: the physics, physiology, and psychology of hearing itself; the pathology of hearing disability; the essentials of a differentiated program of evaluation, training, education, and rehabilitation; basic considerations for socialized living for hearing-handicapped children, including needs and responsibilities of their parents.

The coverage and the emphases indicate that the authors believe a hearing disability will inevitably affect a child's total developmental picture. Therefore it follows that the earliest possible recognition and diagnosis of the hearing condition are imperative, so that the necessary training and education may become a part of the child's daily life.

A highly useful chapter, from this point of view, well presented and practical, is that on hearing aids for children. It is well worth particular study in any situation where children's hearing aids are under consideration. This subject can and does cause confusion and conflict between home and school, and the

child is often left deserted in the wake of the controversy.

Much space is given to a discussion of teaching procedures for children with hearing disabilities, especially severe and profound losses. This will interest many who work with some aspect of children's hearing problems other than education and training. It also should be useful to parents and others who want to understand more about the services available to hearing-handicapped children.

This reviewer feels that a beginning chapter should have been devoted to language itself as a central and integrating influence in a child's development. Human beings are uniquely "built" to be users of symbolic language, and normally the direct preparation for this begins with the child's birth into a thinking speaking, sounding, listening world. An infant who does not hear at all, or who hears only raggedly, misses not only the natural beginnings of two-way free communication, which is bad enough as a handicap, but also an open window upon the universe, which is worse.

The book is rather uneven in writing and treatment, probably because of the multiple authorship; nevertheless, it should be timely and useful to workers in this field. A separate and classified bibliography follows each chapter, and a valuable appendix at the end of the book lists, by states, established hearing rehabilitation centers.

Should the Patient Know the Truth?

A Response of Physicians, Nurses, Clergymen, Lawyers. *Edited by Samuel Standard, M.D., and Helmuth Nathan, M.D. Cloth. Price $3.00. Pp. 159. Springer Publishing Co., New York, 1955.*

Moral and ethical issues, philosophic thought and religious beliefs, even legal considerations may enter into finding the answer to the question: "Will it help or hurt a particular patient to know the truth about his disease?" Interest in this subject had been engendered at a meeting of the New York Academy of Medicine attended by Dr. Samuel Standard and Dr. Helmuth Nathan. The idea of a book with a more inclusive circle of discussants occurred to them, and they proceeded on this basis.

This book's chapters are written by members of the professions who must find the answer and the best way to handle the giving or withholding of information to the patient. The authors are surgeons, internists, psychiatrists, nurses, clergymen representing different faiths, and experts in law. Through many of these authors, the patient's views are also projected.

Cancer and heart disease, imminent death, and the postoperative prognosis present universal problems. The authors discuss and give specific guidance for many typical situations as they occur in their particular fields. They are agreed on this premise—that the well-being of the patient is the primary consideration. However, their dilemma is admittedly to see in what direction the patient's welfare lies. It, of course, depends upon circumstances—psychological, legal, moral, medical, and financial. The authors are generally agreed, also, that the question can be answered only for each individual. There is not one answer, and there is not one rule.

The total of their experiences and beliefs and policies, however, should be helpful to all personnel dealing with the sick. The book is well written, well edited, and thought provoking.

The physical therapist is not faced with the above mentioned serious condition too often, but almost daily meets similar problems in equally demanding situations. "Will I be able to walk?" is a familiar question. As the authors point out, not all questions can be answered with, "Ask your doctor." While all chapters are interesting and enlightening, perhaps the most helpful to the physical therapist are those written by the nurses. Perhaps one quotation will serve to typify the helpfulness of the suggestions contained herein. "Try at all times to act upon the patient so as to modify his sentiments to his own advantage, and remember that, to this end, nothing is more effective than arousing in him the belief that you are concerned whole heartedly and exclusively for his welfare."

The fact that this question, "Should the patient know the truth?" is not unalterably answerable makes it all the more imperative to have some knowledge of the possible answers. The book is generously recommended to all personnel dealing with the sick.

The reviews here published have been prepared by competent authorities and do not represent the opinions of the American Physical Therapy Association.

Our Book Reviewers for March

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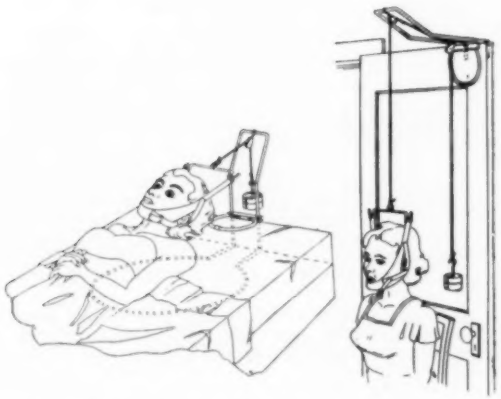
What's New . . . . . .

For more information on items write to The Physical Therapy Review, 1790 Broadway, New York 19, N. Y.

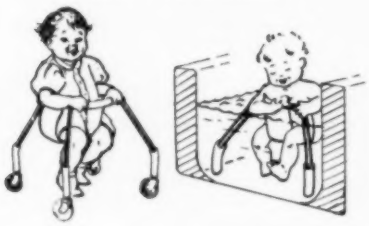
New items which may be of interest to physical therapists will be mentioned in these pages each month. The accompanying explanations are made by the manufacturers and have not been investigated by the *Physical Therapy Review*.

90. Home Traction Assembly



This newly designed unit is ideal for applying traction in the home. Used primarily for cervical traction, it can also be used for applying pelvic traction, etc. The apparatus can be used on any bed in the home — including the Hollywood style beds — or it can be used over a door. Construction is of extremely sturdy steel rod with cadmium plate. Parts that touch the door are amply padded to prevent marring. This traction device can easily be disassembled for storage. Orthopedic Equipment Company.

100. Tot-L-Walk



Tot-L-Walk is versatile in that the casters may be removed for use as a chair. Rubber guards above the caster sockets prevent slipping if the equipment is used as support during underwater exercise periods. Tot-L-Walk has a sturdy, welded frame with baked enamel finish, is lightweight, and is produced in several sizes. Kewaunee Equipment Co., Inc.

101. Protective Collar

The Lewin Cotton Collar is a simple, comfortable device for protection of the cervical region. The collar is 9 ft. long and has a varying width of 3 in. to 6 in. Two layers of Silkaline enclose the cotton. A more rigid model is constructed of foam rubber vulcanized to rayon satin with a soft cotton lining. S. H. Camp and Company.

Classified WANT-ADS

STAFF THERAPIST FOR MODERN Physical Medicine and Rehabilitation Department in a 300-bed hospital. This position offers long time security and a pleasant, enjoyable place to work on the South Side of Chicago overlooking Jackson Park. Two weeks' vacation with pay after one year, seven paid holidays, noon meal, uniforms laundered, and free pass on local I. C. trains. Good salary depending on experience. Physiatric supervision. Apply Dr. A. Rodriquez, Physiatrist, Illinois Central Hospital, 5800 Stony Island Avenue, Chicago 37, Illinois.

IOWA METHODIST HOSPITAL, Des Moines, Iowa, needs qualified physical therapist. Hospital has 400 beds, including 100-bed Raymond Blank Memorial for Children. Postpolio cases and in- and outpatient work. Competent professional staff and assistants, excellent working relationships. Apply: Bruce D. Root, Personnel, Director.

PHYSICAL THERAPY Department needs additional therapist; 310-bed hospital with expansion program underway. Modern equipment, substantial salary, good personnel policies. Pleasant surroundings in fine sports area; ¾ hour drive to downtown Detroit. Write: Miss Marie C. Hickey, Physical Therapist, St. Joseph Mercy Hospital, Pontiac, Michigan.

POSITIONS AVAILABLE for qualified physical therapists for active rehabilitation department in modern 500-bed, chronic disease hospital. Salary open. Four weeks' vacation. Sick benefits. Lunches. Apply Superintendent, St. Barnabas Hospital, New York 57, N. Y.

PHYSICAL THERAPIST for active, well equipped department in teaching hospital affiliated with Northwestern University. Located in pleasant residential suburb on Lake Michigan. Forty-hour week. Good salary. Apply Personnel Director, Evanston Hospital, Evanston, Illinois.

PHYSICAL THERAPIST for INPATIENT PROGRAM treating children from 2 to 12 years of age with cerebral palsy. Program expanding to include children with other orthopedic and neurological disabilities. Medical team approach. Living quarters and meals available at minimum cost. Uniform laundry furnished. Salary commensurate with experience. Write Mrs. Kathleen Wingate, Edith Hartwell Clinic of Strong Memorial Hospital, Le Roy, New York.

SUMMER CAMP POSITIONS: Physical therapists needed for camps for crippled children—June 23—August 22. Address replies to: The Pennsylvania Society for Crippled Children and Adults, Inc., 1107 North Front Street, Harrisburg, Pennsylvania.

GROWING DEPARTMENT in new 250-bed general hospital needs qualified female physical therapist now. Very well equipped department has been open two years. Wide variety of cases, 40% hospital patients, 60% outpatients. Forty-hour week, good salary. Lovely Colorado college town, near Denver and mountains. Reply: Miss Myra Garhart, Physical Therapy Department. Weld County General Hospital, Greeley, Colorado.

WANTED: ADDITIONAL physical therapist for 140-bed Children's Hospital. Treatments stress rehabilitation. Salary good, 3 weeks' vacation, 2 weeks' sick leave, 40-hour week. Apply: Jewell Radford, Physical Therapy Department, Mary Free Bed Children's Hospital, Grand Rapids, Michigan.

PHYSICAL THERAPIST WANTED: To take charge of physical therapy department in 125-bed general hospital. Good salary with regular increases, paid vacation, holidays and sick leave. Contact Administrator, De Paul Hospital, Cheyenne, Wyoming.

STAFF PHYSICAL THERAPIST, male or female for specialized physical therapy under medical and physiatric direction at expanding in- and outpatient department with ample opportunity for research. Write: Gabriel Steiner, M.D., Medical Director, Michigan Multiple Sclerosis Center, 1800 Tuxedo, Detroit 6, Michigan.

PHYSICAL THERAPIST, staff position, 600-bed general hospital. Vacation, sick leave and social security benefits. Apply Personnel Director, Harper Hospital, Detroit, Michigan.

WANTED IMMEDIATELY: QUALIFIED PHYSICAL THERAPIST for general physical medicine and rehabilitation service; 44-hour week, 12 days' paid vacation after first year; 7 holidays, sick leave, Social Security. Salary dependent upon experience. Write; Mrs. Helen Feiler, Director of Personnel Services, Douglas County Hospital, 41 & William Sts., Omaha, Nebraska.

QUALIFIED PHYSICAL THERAPIST needed for supervisor of department in children's orthopedic hospital. Good salary, 15 days' vacation, 15 days' sick leave, 40-hour week. Contact Leo P. Schwartz, Administrator, Carrie Tingley Hospital, Truth or Consequences, New Mexico.

PHYSICAL THERAPIST needed immediately for Rehabilitation Center, Northern Indiana Childrens Hospital. Full time, 5-day, 40-hr. week. Outpatients only. Excellent salary, dependent on experience and education. Apply John C. Van Metre, Superintendent, 1234 N. Notre Dame Ave., South Bend 17, Indiana.

WANTED: Qualified physical therapist for staff position in a 650-bed University teaching hospital including 30-bed rehabilitation center. Two-week vacation, six paid holidays, sick leave benefits. Attractive starting salary. Experience not necessary. Write Harold N. Neu, M.D., Creighton Memorial St. Joseph's Hospital, Omaha, Nebraska.

COUNSELLORS (men and women) for crippled children's camp. Beautiful mountain camp, July 15–August 12. Full maintenance, low salary, hard work. Experience unnecessary. Interesting opportunity helping to organize program for first season's operation. N. C. Society for Crippled Children, Box 839, Chapel Hill, North Carolina.

PHYSICAL THERAPIST NEEDED for general hospital. Excellent education and teaching facilities. Good salary. Write to Dr. Hilda B. Case, University Hospitals, 2065 Adelbert Road, Cleveland 6, Ohio.

Classified WANT-ADS

QUALIFIED PHYSICAL THERAPIST for large cerebral palsy outpatient center with total program; 5-day, 35-hour week. Uniforms and laundry provided. Good salary. Vacations, sick leave, holidays. Write Clinic Director, United Cerebral Palsy Assn., 380 Washington Ave., Roosevelt, N. Y.

WANTED: QUALIFIED PHYSICAL THERAPIST to start Home Service Program (Jan. 1, 1956) with an Outpatient Physical Medicine, Rehabilitation Center. Good personnel policies. Salary dependent upon experience. Write: Gloria J. Fitzpatrick, RPT, Director, Ingham County Curative Workshop, 615 North Capitol, Lansing, Michigan.

IMMEDIATE PLACEMENT in certified orthopaedic surgeon's office, expanding department, fully equipped. Forty-hour week, group insurance, social security. Salary open. Write or call collect Fred L. Stuttle, M.D., 410 Main, Peoria, Illinois.

WANTED: QUALIFIED physical therapist for Cerebral Palsy Clinic. Forty-hour week. For additional information write Miss Priscilla Ball, Executive Secretary, United Cerebral Palsy of Tampa, 121 Columbia Drive, Davis Islands, Tampa, Florida.

QUALIFIED PHYSICAL THERAPIST for 350-bed fully accredited hospital. Located on Long Island Sound, one hour from New York City. Liberal vacation and other fringe benefits. Apply Hugh K. Angle, Personnel Director, Norwalk Hospital, Norwalk, Conn.

PHYSICAL THERAPIST: qualified, for 500-bed general hospital. Modern department. Salary good; 40-hour week. Paid vacation; sick leave. Living quarters available if desired. Apply Personnel Department, The Grace Hospital, 4160 John R. Street, Detroit 1, Michigan.

PHYSICAL THERAPIST: for Crippled Children's Service, Massachusetts Department of Public Health. A Civil Service appointment. Good salary with yearly increments. Paid vacations, sick leave, insurance and retirement benefits. Apply to Miss M. Foster, Room 524, 88 Broad St., Boston 10, Massachusetts.

PHYSICAL THERAPIST: In Hospital-School for rehabilitation of children with orthopedic handicaps. Complete interesting program. Good salary, merit increases. Annual paid vacation, sick leave, excellent retirement plan. Write Vera E. Dennis, Director of Physical Therapy, Illinois Children's Hospital-School, 2551 N. Clark, Chicago 14, Ill.

PHYSICAL THERAPIST: For rural outpatient group medical practice clinics near Pittsburgh, Pennsylvania. Opportunities for rich professional associations with diverse staff of Board qualified specialists, including physical medicine and rehabilitation Diplomate. Minimum qualifications: American Registry; one year supervised experience. Good salary, dependent upon qualifications; annual salary increments. Address inquiries to T. P. Hipkens, 610 Empire Building, 507 Liberty Avenue, Pittsburgh 22, Pennsylvania.

Classified WANT-ADS

RATE CHANGE

The rate is now 75¢ a line. After

May 1, 1956

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